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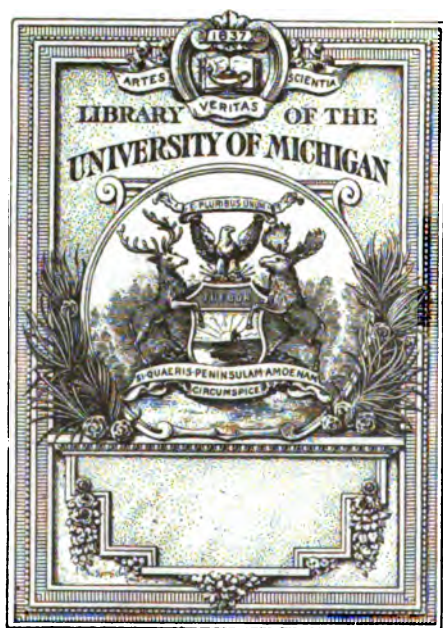
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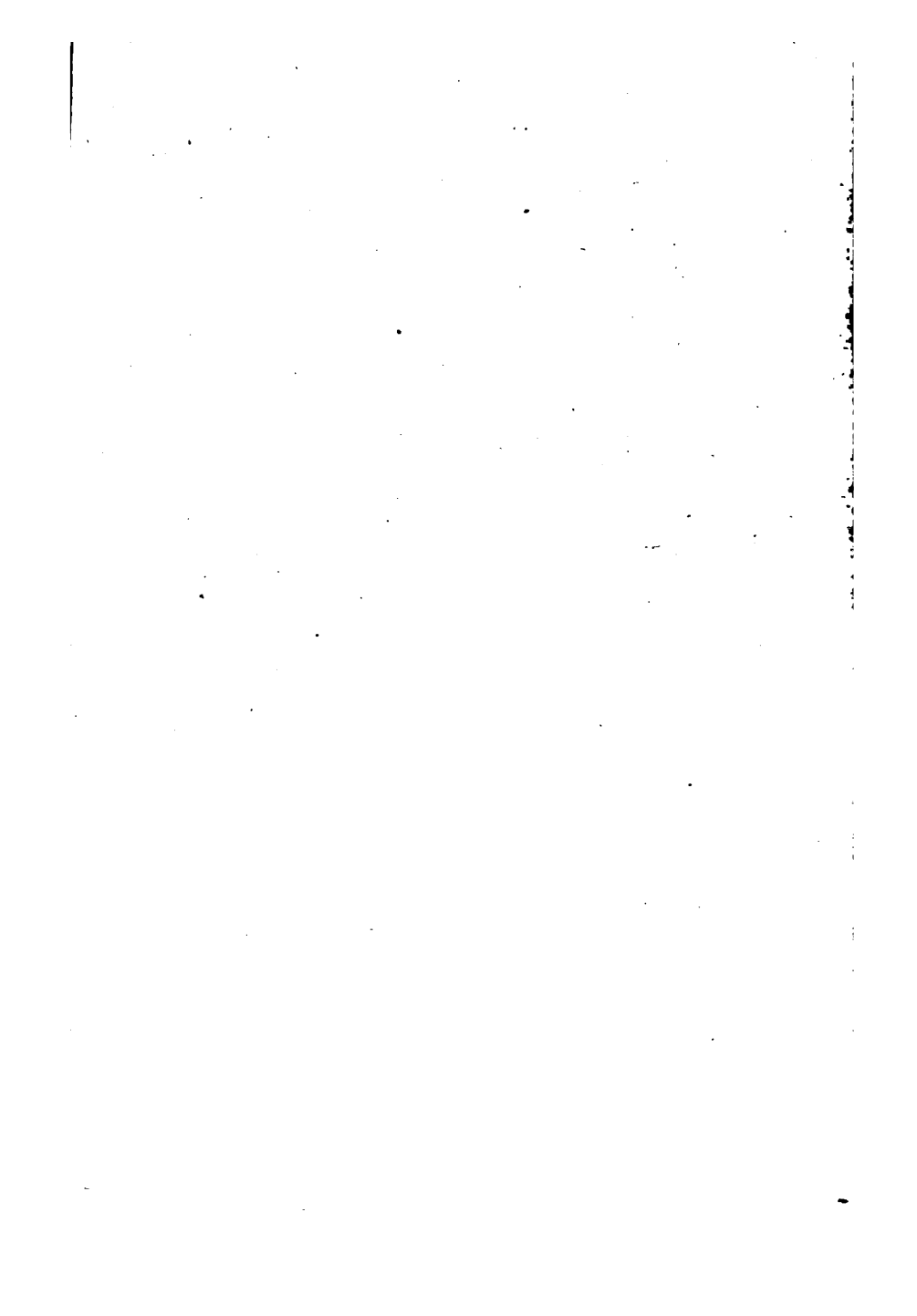
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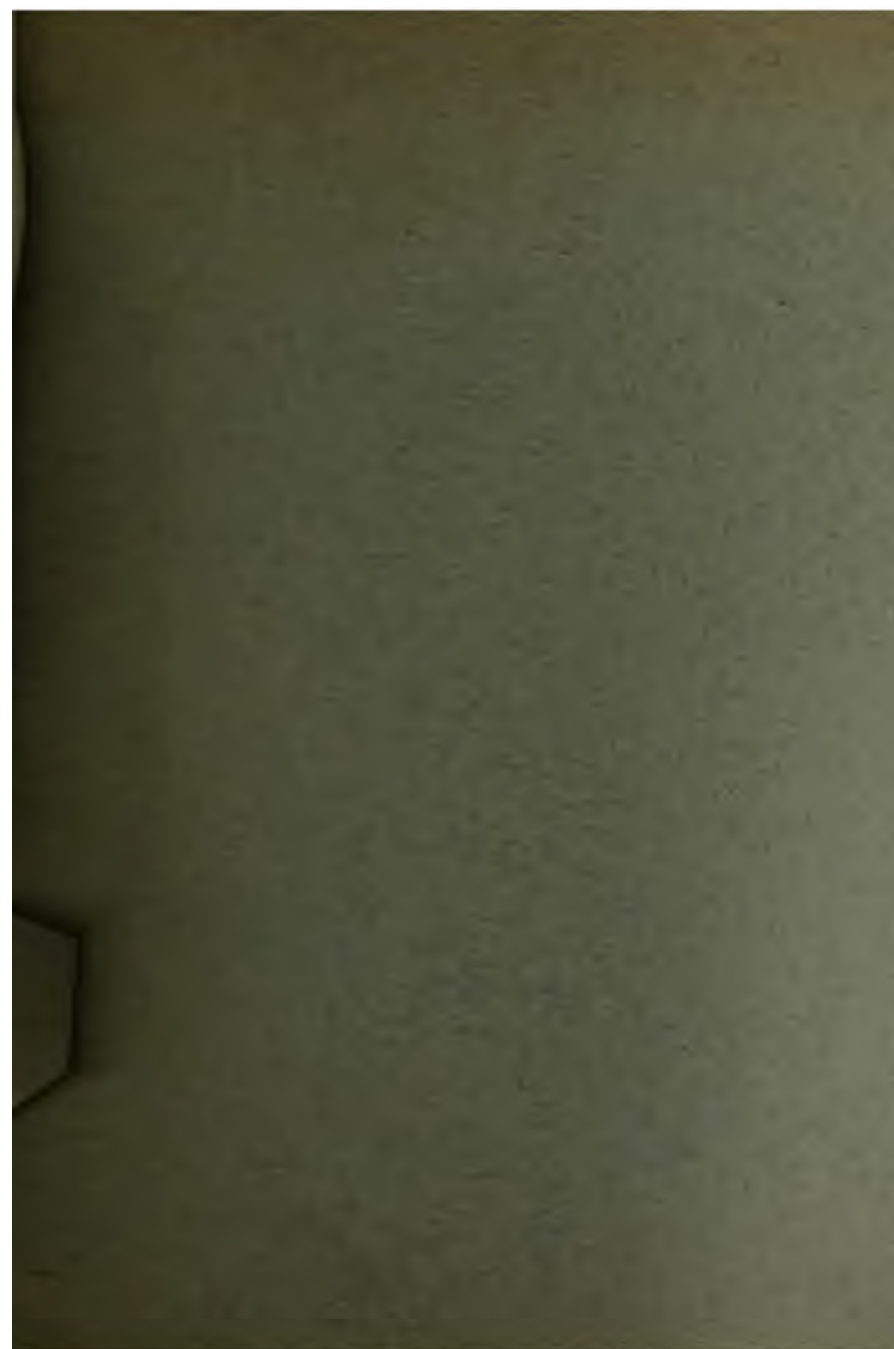
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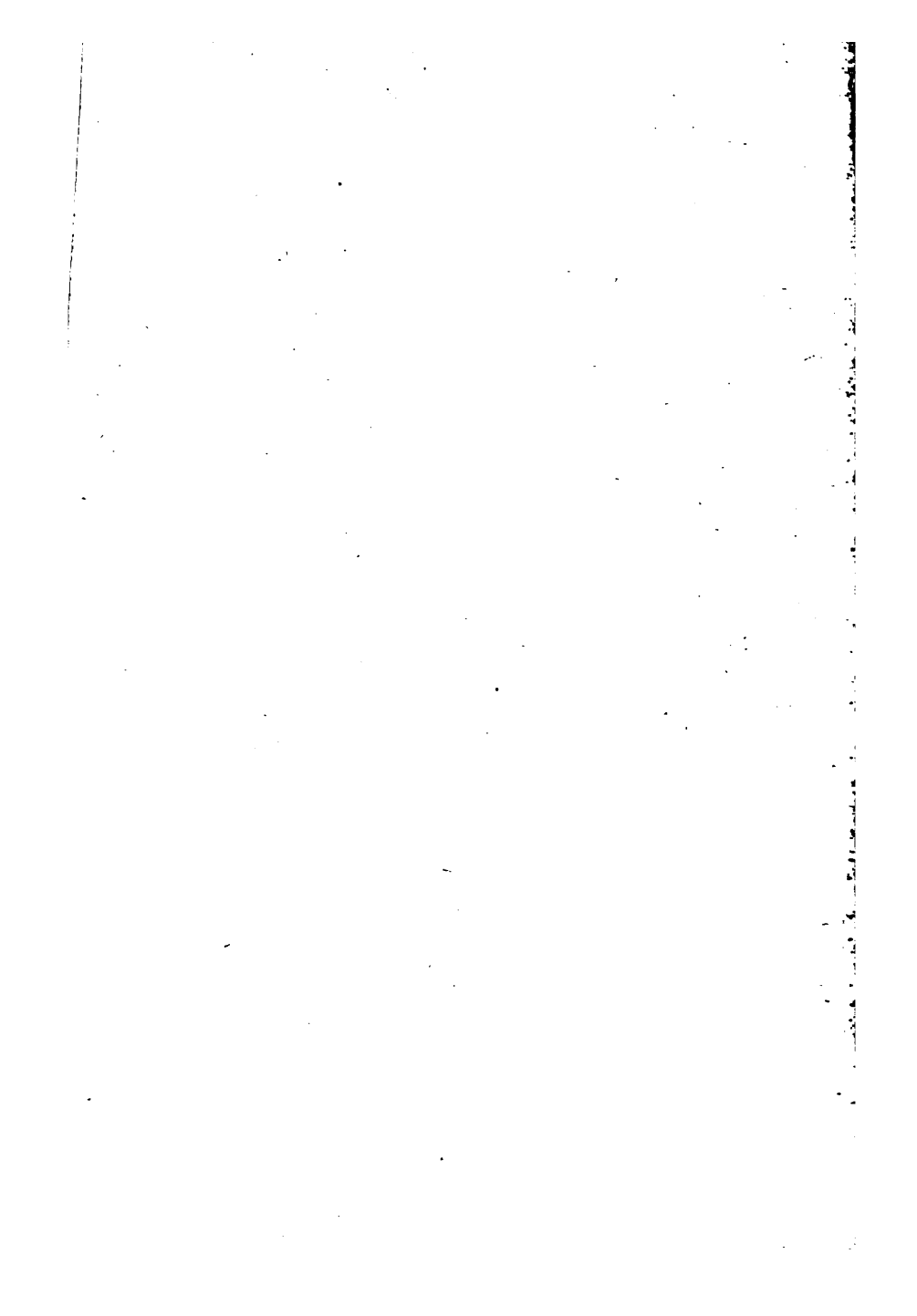












CATALOGUE  
OF  
RUTGERS COLLEGE  
AT  
NEW BRUNSWICK, N. J.



1890-'91.



CATALOGUE  
OF THE  
OFFICERS AND STUDENTS  
OF  
*univ.*  
RUTGERS COLLEGE  
= AT  
NEW BRUNSWICK, N. J.  
1890-91.

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CHARTERED AS QUEEN'S COLLEGE, A. D. 1766.

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TRENTON, N. J.  
J. L. MURPHY PUBLISHING CO.  
1891.

## CALENDAR.

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### 1890.

SEPTEMBER 16, Tuesday: Examinations for admission.  
 SEPTEMBER 17, Wednesday: First Term begins. Recitations.  
 OCTOBER 4, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 28, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOV. 26-DEC. 1, Thanksgiving Recess.  
 DECEMBER 17-23, Examinations. Tuesday: First Term ends.  
 DEC. 23-JAN. 7, Christmas Vacation.

### 1891.

JANUARY 7, Wednesday: Second Term begins. Recitations.  
 JANUARY 29, Day of Prayer for Colleges.  
 FEBRUARY 4, Inauguration of President Austin Scott, Ph.D., 2:30 P. M.  
 FEBRUARY 22, Washington's Birthday.  
 MARCH 3, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 MARCH 25-31, Examinations. Tuesday: Second Term ends.  
 MAR. 31-APR. 8, Spring Vacation.  
 APRIL 8, Wednesday: Third Term begins. Recitations.  
 MAY 18, 19, Monday and Tuesday: Senior Final Examinations.  
 JUNE 8-12, Examinations of Three Lower Classes.  
 JUNE 12, Friday: Reading of Theses by Scientific Seniors, 2 P. M.  
 JUNE 14, Sunday: Baccalaureate Sermon, 7:30 P. M.  
 JUNE 15, 16, Monday, 10 A. M., and Tuesday: Examinations for admission.  
 JUNE 15, Monday: Class-Day Exercises, 3 P. M.  
 JUNE 16, Tuesday:  
     Commencement Meeting of the Board of Trustees, 10 A. M.  
     Meeting of the Alumni, 10 A. M.  
     Exercises of the Literary Societies, 3:30 P. M.  
     Junior Exhibition, 8 P. M.  
 JUNE 17, Wednesday: 125th Annual Commencement, 10 A. M.  
 JUNE 17-SEPT. 22, Long Vacation.  
 SEPTEMBER 22, Tuesday:  
     Examinations for admission, 10 A. M.  
     Examinations for removal of June conditions, 10 A. M.  
 SEPTEMBER 23, Wednesday: First Term begins. Recitations.  
 OCTOBER 3, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 27, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOV. 25-30, Thanksgiving Recess.  
 DECEMBER 16-22, Examinations. Tuesday: First Term ends.  
 DEC. 22-JAN. 6, Christmas Vacation.

### 1892.

JANUARY 6, Wednesday: Second Term begins. Recitations.

## TRUSTEES.

1890-91.

## EX-OFFICIO.

HIS EXCELLENCY LEON ABBETT,	JERSEY CITY.
<i>Governor of the State of New Jersey.</i>	
HON. MERCER BEASLEY, LL.D.,	TRENTON.
<i>Chief Justice of the State of New Jersey.</i>	
HON. JOHN P. STOCKTON,	TRENTON.
<i>Attorney-General of the State of New Jersey.</i>	

## BY ELECTION.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
AUSTIN SCOTT, PH.D., <i>President of the College.</i>	New Brunswick,	Nov. 25, 1890.
REV. T. E. VERMILYE, D.D., LL.D.,	New York City, 15 West 56th St.	July 24, 1849.
HON. JOHN HOPPER,	Paterson,	July 22, 1851.
MAURICE E. VIELE, ESQ.,	Albany, N. Y.,	July 27, 1853.
REV. DAVID D. DEMAREST, D.D.,	New Brunswick,	April 13, 1858.
HON. JOSEPH P. BRADLEY, LL.D.,	Washington, D. C.,	June 29, 1859.
HENRY L. JANEWAY, ESQ.,	New Brunswick,	April 8, 1862.
REV. TALBOT W. CHAMBERS, D.D., LL.D.,	New York City, 70 West 36th St.	June 17, 1863.
REV. JOACHIM ELMENDORF, D.D.,	New York City, 61 East 123d St.	April 14, 1869.
REV. PAUL D. VAN CLEEF, D.D.,	Jersey City,	April 14, 1869.
SAMUEL SLOAN, ESQ.,	New York City, 26 Exchange Place.	June 20, 1871.
HON. GEORGE C. LUDLOW,	New Brunswick,	June 17, 1873.
HON. WILLIAM A. NEWELL, M.D., LL.D.,	Olympia, Wash.,	June 17, 1873.
REV. ISAAC S. HARTLEY, D.D.,	Utica, N. Y.,	June 17, 1873.
REV. JOHN GASTON, D.D.,	Passaic,	June 20, 1876.
HON. HENRY W. BOOKSTAVEN, LL.D.,	New York City, 14 East 67th St.	June 20, 1876.
ROBERT F. BALLANTINE, ESQ.,	Newark,	June 20, 1876.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
REV. WILLIAM RANKIN DURYEE, D.D.,	Jersey City,	March 5, 1878.
REV. WILLIAM J. R. TAYLOR, D.D.,	New York City, 33 Washington Sq., West.	June 18, 1878.
REV. ABRAHAM R. VAN NEST, D.D.,	New York City, 62 Wall St.	Oct. 29, 1878.
WILLIAM CLARK, Esq.,	Newark,	Oct. 29, 1878.
HON. GEORGE H. SHARPE,	Kingston, N. Y.,	March 4, 1879.
DAVID BINGHAM, Esq.,	East Orange,	March 7, 1882.
HENRY R. BALDWIN, M.D.,	New Brunswick,	June 17, 1884.
FREDERICK FRELINGHUYSEN, Esq.,	Newark,	June 16, 1885.
ERNEST J. MILLER, Esq.,	Albany, N. Y.,	June 16, 1886.
HON. JONATHAN DIXON, LL.D.,	Jersey City,	June 22, 1886.
JAMES NEILSON, Esq.,	New Brunswick,	June 22, 1886.
REV. RODERICK TERRY, D.D.,	New York City, 169 Madison Ave.	June 22, 1886.
TUNIS G. BERGEN, Ph.D.,	Brooklyn, N. Y., 127 Pierrepont St.	Oct. 25, 1887.
REV. EDWARD B. COE, D.D.,	New York City, 42 West 52d St.	Oct. 25, 1887.
ELBERT B. MONROE, Esq.,	Southport, Conn.,	Oct. 25, 1887.
REV. JOHN B. DRURY, D.D.,	New Brunswick,	Oct. 25, 1887.
REV. JAMES LE FEVRE,	Middlebush,	June 19, 1888.
*GARRETT E. WINANTS, Esq.,	Bergen Point,	March 5, 1889.

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REV. DAVID D. DEMAREST, D.D.,	New Brunswick.
<i>Secretary of the Board.</i>	
FREDERICK FRELINGHUYSEN, Esq.,	Newark.
<i>Treasurer of the Board.</i>	

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## STATED MEETINGS OF THE BOARD.

Last Tuesday in October, at 2 o'clock P. M.

First Tuesday in March, at 2 o'clock P. M.

Tuesday before Commencement, at 10 o'clock A. M.

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\* Died August 10th, 1890.



FACULTY.

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AUSTIN SCOTT, PH.D.,  
PRESIDENT,

VOORHEES *Professor of History and Political Science.*  
24 Livingston Avenue.

REV. THEODORE SANDFORD DOOLITTLE, D.D.,  
VICE PRESIDENT,

COLLEGIATE CHURCH *Professor of Rhetoric, Logic and Mental Philosophy.*  
Seminary Place.

---

\* THEODORE FREELINGHUYSEN *Professor of Moral Philosophy.*

REV. JACOB COOPER, D.D., D.C.L.,  
*Professor of the Greek Language and Literature.*  
108 George Street.

REV. CARL MEYER, D.D.,  
*Professor of Modern Languages and Literatures.*  
245 Easton Avenue.

FRANCIS CUYLER VAN DYCK, PH.D.,  
*Professor of Physics and Experimental Mechanics.*  
84 College Avenue.

EDWARD A. BOWSER, C.E., LL.D.,  
*Professor of Mathematics and Engineering.*  
Queen's College Building.

GEORGE BENJAMIN MERRIMAN, A.M.,  
*Professor of Mathematics and Astronomy.*  
282 Hamilton Street.

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• The duties of this professorship are, for the present year, discharged by the Vice President.

## RUTGERS COLLEGE.

\*PETER TOWNSEND AUSTEN, PH.D., F.C.S.,  
*Professor of General and Applied Chemistry.*  
22 Union Street.

REV. CHARLES EDWARD HART, D.D.,  
*Professor of the English Language and Literature.*  
33 Livingston Avenue.

FRANCIS AUGUSTUS WILBER, M.S.,  
*Professor of Analytical Chemistry.*  
Bishop Place.

LOUIS BEVIER, PH.D.,  
*Professor of Modern Languages.*  
145 College Avenue.

EDGAR SOLOMON SHUMWAY, A.M.,  
*Professor of the Latin Language and Literature.*  
208 Redmond Street.

ALFRED ALEXANDER TITSWORTH, M.S., C.E.,  
*Professor of Graphics and Mathematics.*  
57 Livingston Avenue.

JULIUS NELSON, PH.D.,  
*Professor of Biology, and its Applications in Developing Food-Products.*  
(Experiment Station)  
Adelaide Avenue, Highland Park.

SAMUEL EWING SMILEY, 2D LIEUTENANT, 8TH U. S. INFANTRY,  
*Professor of Military Science and Tactics.*  
Geological Hall.

BYRON DAVID HALSTED, SC.D.,  
*Professor of Botany and Horticulture.*  
(Experiment Station.)  
342 George Street.

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\* Resigned December 31st, 1890.

RUTGERS COLLEGE.

7

JOHN BERNHARD SMITH,

*Professor of Entomology.*  
*(Experiment Station.)*  
81 Easton Avenue.

JOHN DE WITT, JR., A.B.,

*Instructor in Mathematics and Assistant in English Composition.*  
Seminary Place.

EDWARD THORN MIDDLETON, B.S.,

*Instructor in Electricity and Physics.*  
845 George Street.

IRVING STRONG UPSON, A.M.,

*Librarian and Registrar.*  
118 Bayard Street.

EDWARD BURNETT VOORHEES, A.M.,

*Professor of Agriculture.*  
83 Easton Avenue.

EDWARD LUTHER STEVENSON, PH.D.,

*Instructor in History.*  
64 College Avenue.

WILLIAM DODGE HORNE, PH.B.,

*Instructor in Analytical Chemistry, and Laboratory Assistant.*  
13 Hardenbergh Street.

CHARLES EVERETT ADAMS, A.M., M.D.,

*Instructor in Gymnastics.*  
64 College Avenue.

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JOHN C. VAN DYKE, L.H.D.,

*Lecturer upon Modern French Art for 1890-91.*  
Sage Library.

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The names of the Faculty after that of the President are arranged according to seniority of appointment.

## CATALOGUE OF STUDENTS

FOR THE YEAR BEGINNING SEPTEMBER 17, 1890.

## SENIOR CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JAMES BISHOP, JR.,	Trenton,	Delta Phi House.
EDWARD OTIS CHICKERING,	Roseton-on-Hudson, N. Y.,	166 New St.
HARRY ROSE DANNER,	Paterson,	84 Winants Hall.
*RICHARD JONES GRISINGER,	Bridgeton.	
HOWARD CROSBY HASBROUCK,	New Brunswick,	Highland Park.
JASPER SAMUEL HOGAN,	Guilderland Cent., N. Y.,	53 Hertzog Hall.
ROBERT JAMES HOGAN,	Guilderland Cent., N. Y.,	53 Hertzog Hall.
ABRAM WHITTAKER HOPPER,	Spring Valley, N. Y.,	47 Hertzog Hall.
CHARLES WESLEY HULST,	Greenwich, N. Y.,	103 Winants Hall.
HARRY LOCKWOOD,	Albany, N. Y.,	49 Winants Hall.
SAMUEL CLIFFTON MABON,	New Brunswick,	2 Seminary Place.
WILLIAM FORDER METS,	Somerville,	119 Albany St.
FRANK REID MILLER,	Sacramento, Cal.,	117 Bayard St.
WILLIAM POHLMAN POOL.	Somerville,	102 Winants Hall.
JOHN HOWARD RAVEN,	Brooklyn, N. Y.,	Zeta Psi House.
PATRICK AUGUSTINE RAY,	Greenwich, N. Y.,	90 Albany St.
HOWARD AUGUSTUS REYNOLDS,	New Brunswick,	179 George St.
HERBERT BENNETT ROBERTS,	Brooklyn, N. Y.,	37 Hertzog Hall.
WALTER COOLEY SAMPSON,	New York City,	Chi Psi Lodge.
EDWARD VAN VECHTEN SEARLE,	Hurley, N. Y.,	37 Hertzog Hall.
JAMES COFFYN STOUT,	New Brunswick,	56 Bayard St.
CLIFFORD HENRY STRANG,	Montrose-on-Hudson, N. Y.,	Delta Phi House.
WILLIAM VAN DEURSEN STRONG,	New Brunswick,	86 Carroll Place.
ERASTUS AMES WHITENACK,	Bedminster,	215 New St.
GILBERT WYNKOOP,	Catskill, N. Y.,	62 Winants Hall.

\* Died January 29th, 1890.

Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JOHN CHARLES AYDELOTT.	Pekin, Ill.,	64 College Ave.
PHILANDER BETTS, 3d,	Hackensack,	Winants Hall.
ELIHU CALVIN BRYAN,	Shekomoko, N. Y.,	134 Winants Hall.
JOSEPH COMPTON CASTNER,	New Brunswick,	180 Church St.
PAULL JEWELL CHALLEN,	New Brunswick,	186 Hamilton St.
ROBERT JOSEPH DOUGHERTY,	New Brunswick,	88 Carroll Place.
HARRY WILLIAMS FULLER,	Bayonne City,	Bayonne City.
THOMAS MANDEVILLE HOPPER,	Paterson,	102 Winants Hall.
SAMUEL ARTHUR JOHNSON,	Morristown,	12 Winants Hall.
GEORGE ANDREWS MITCHELL,	Vineland,	281 Hamilton St.
MARCUS CALDWELL SEARS,	Blooming Grove, N. Y.,	College Farm.
FREDERICK SEYMOUR SMITH,	Morristown,	134 Winants Hall.
ISAAC MABBETT SUTTON,	Poughkeepsie, N. Y.,	64 College Ave.
ARTHUR BENJAMIN TOTTEN,	Middlebush,	Middlebush.
CORNELIUS D. VEEELAND, JR.,	Little Falls,	95 Bayard St.
EDWARD LASKY WELLING,	Warwick, N. Y.,	Delta Phi House.

## JUNIOR CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
WINFRED RUGAN ACKERT,	Poughkeepsie, N. Y.,	55 Winants Hall.
ALBERT DORRANCE BALDWIN,	Newark,	Chi Psi Lodge.
JOSEPH FREDERIC BERG,	Brooklyn, N. Y.,	25 Hertzog Hall.
CLARENCE HORNBECK BONNELL,	Port Jervis, N. Y.,	30 Winants Hall.
PHILIP MILLEDOLER BRETT,	Jersey City,	Delta Phi House.
HENRY ROBINSON BRISTOL,	Warsaw, N. Y.,	87 Winants Hall.
JAMES DICKSON CARR,	New York City,	121 Winants Hall.
GARRETT MILTON CONOVER,	Clinton,	81 Hertzog Hall.
DRURY WALLS COOPER,	New Brunswick,	108 George St.
CHARLES EDWARD CORWIN,	New Brunswick,	Hertzog Hall.
HARRY KIMBALL DAVIS,	Amsterdam, N. Y.,	166 New St.
CHALMERS PETER DYKE,	Grand Rapids, Mich.,	55 Winants Hall.
ROBERT EMMET FARLEY,	Fort Plain, N. Y.,	109 Winants Hall.
GILBERT TERBELL GALE,	Bayonne City,	Chi Psi Lodge.
AMOS HOPPOCK HAINES,	Sergeantsville,	Somerset St.
JESSE CHARLES HAZZARD,	Kingston, N. Y.,	Chi Psi Lodge.
GEORGE DE WITT KELSO,	Newburgh, N. Y.,	147 Bayard St.
ISAAC WILLIAM LOTT,	Flatlands, L.I.,	24 Hertzog Hall.
MITSUYE OI,	Tokio, Japan,	33 Hertzog Hall.
HENRY WEMPLE PAWLING,	Hagaman's Mills, N. Y.,	121 Winants Hall.
WALTER TRACY SCUDDER,	Tindivanam, India,	Delta Phi House.
WILLIAM CARMAN SHERWOOD,	Jersey City,	Delta Phi House.
JAMES BISHOP THOMAS,	New Brunswick,	256 Seaman St.
JAMES WESTFALL THOMPSON,	New Brunswick,	137 Somerset St.
FRANK VOORHEES.	Englewood,	5 Winants Hall.
ROBERT SUMNER WINN,	Madison, Wis.,	137 Somerset St.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
ANDREW HALL BERRY,	Elizabeth,	105 Winants Hall.
EUGENE BETTS,	Hackensack,	Hackensack.
ELLIS BISHOP,	Trenton,	Delta Phi House.
HOLMES EARLE BRUERE.	Cream Ridge,	12 Winants Hall.
GEORGE COLFAX BULLOCK,	Jacobstown,	Chi Psi Lodge.
WILLIAM JACOB COOPER,	New Brunswick,	108 George St.
PETER CONOVER FIELD,	New Brunswick,	381 George St.
HAROLD LYMAN HOYT,	New Brunswick,	157 Hamilton St.
JAMES MORRIS McCLOSKEY,	New Brunswick,	437 George St.
J. LIVINGSTON RUTGERS MORGAN,	New Brunswick,	47 Bayard St.
WILLIAM THOMAS MORRISON,	New Brunswick,	21 Schuyler St.
WILLIAM HULINGS STAFFORD,	Haddonfield,	81 Winants Hall.
HENRY HEWGILL STEVENS,	New Brunswick,	Clifton Ave.
FRANK ROBERTSON VAN HORN,	Johnsonsburg,	5 Winants Hall.
GARRETT SCOTT VOORHEES,	Bedminster,	28 Hertzog Hall.
HENRY EDWIN WATERS,	Rahway,	Rahway.
DANIEL GREGORY WRIGHT,	Egypt, N. C.,	105 Winants Hall.
GEORGE HAMPTON WYCKOFF,	New Brunswick,	243 George St.

## SOPHOMORE CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
FRANKLIN RICHMOND CUSHMAN,	Glocester, R. I.,	Franklin Park.
HENRY CHARLES CUSSLER,	Catskill, N. Y.,	166 New St.
ABRAM DURYEE,	East Millstone.	18 Hertzog Hall.
HENRY HARRINGTON JANEWAY,	New Brunswick,	192 Livingston Ave.
FRANK MALVEN,	Port Jervis, N. Y.,	Delta Phi House.
ROBERT DODGE MERRILL,	New Brunswick,	72 Easton Ave.
ISAAC MESSLER,	White House,	22 Hertzog Hall.
LOUIS HOWELL METTLER,	East Millstone,	43 Winants Hall.
BURTON STEARNS PHILBROOK,	Jersey City,	97 Winants Hall.
FRANCIS BAIRD SANFORD,	Warwick, N. Y.,	58 Winants Hall.
HOBART EARL STUDLEY,	Hudson, N. Y.,	22 Hertzog Hall.
CHARLES EDWARD TINDELL,	New Brunswick,	214 Townsend St.
ISAAC J. VAN HEE,	Pultneyville, N. Y.,	10 Hertzog Hall.
FRANK M. VAN ORDEN,	Spring Valley, N. Y.,	9 Winants Hall.
ELLIS ROBERT WOODRUFF,	New Brunswick,	122 Bayard St.



## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
<b>REGINALD BRIANT ALLEN,</b>	Medford,	70 Winants Hall.
<b>ARTHUR NORWOOD BINGHAM,</b>	East Orange,	Zeta Psi House.
<b>CHARLES STORR CHAMBERLAIN,</b>	Madanapalle, India,	9 Winants Hall.
<b>RICHARD STEVENS CONOVER, JR.,</b>	New Brunswick,	218 Redmond St.
<b>ALBERT HENRY DARNELL,</b>	Mount Holly,	Zeta Psi House.
<b>HORACE MUNSON DECKER,</b>	Newark,	Newark.
<b>PHILIP BEVIER HASBROUCK, JR.,</b>	Libertyville, N. Y.,	Chi Psi Lodge.
<b>JOSEPH ALLEN HEADLEY,</b>	Union,	77 Winants Hall.
<b>JAMES WALLACE HIGGINS,</b>	Roselle,	70 Winants Hall.
<b>CHARLES EDGAR LOVEJOY,</b>	Elizabeth,	Elizabeth.
<b>RICHARD SWANN LULL,</b>	Trenton,	Chi Psi Lodge.
<b>WILLIAM GELON MCKNIGHT,</b>	New Brunswick,	58 Bayard St.
<b>DANIEL HERBERT MCLAURY,</b>	New Brunswick,	350 George St.
<b>GEORGE WASHINGTON MENDENHALL,</b>	Bordentown,	58 Winants Hall.
<b>FRANK WILBUR REMSEN,</b>	Blackwell's Mills,	Hertzog Hall.
<b>EZRA FRED SCATTERGOOD,</b>	Burlington,	70 Winants Hall.
<b>HARRY NOE SELVAGE,</b>	Bayonne City,	Chi Psi Lodge.
<b>RICHARD STORMS,</b>	Paskack,	117 Winants Hall.
<b>VERELAND TOMPKINS,</b>	Jersey City,	43 Winants Hall.
<b>DAVID HIGGINS TOWNLEY,</b>	Elizabeth,	Zeta Psi House.
<b>HENRY FRANCIS TWITCHELL,</b>	Newark,	Chi Psi Lodge.
<b>CHARLES HENRY EARL UTTER,</b>	Newark,	Newark.
<b>HERBERT METLAR WALDRON,</b>	New Brunswick,	417 George St.
<b>HOWARD VAN DEVENTER WALDRON,</b>	New Brunswick,	417 George St.

## FRESHMAN CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
FREDERICK JACOB BAERNY,	New York City,	121 Winants Hall.
WILLIAM EDGAR COMPTON,	Jamesburg,	Jamesburg.
WALTER WHEELER COOK,	New Brunswick,	Grammar School Home.
HOLMES VAN METER DENNIS, JR.,	Freehold,	34 Winants Hall.
CHARLES MORISON DIXON,	New Brunswick,	191 George St.
FREDERICK CHRISTOPHER GRANT,	Plainfield,	Plainfield.
WILLIAM BOTSFORD JUDD,	Cranford,	Cranford.
EDGAR IRELAND McCULLY,	Little Falls,	118 Winants Hall.
ALLAN McLEAN,	Jersey City,	95 Bayard St.
HENRY MILLER,	New Brunswick,	117 Throop Ave.
OTTO LEOPOLD FREDERICK MOHN,	Beverly,	2 Winants Hall.
EDMUND PHILIP NISCHWITZ,	Warrenville,	186 Winants Hall.
WALTER PFEIFFER,	Williamstown,	76 Winants Hall.
ANTHONY HARRY ROTTGER,	Jamaica, N. Y.,	Grammar School Home.
JOHN AUGUSTUS SARLES,	Stelton,	Stelton.
WILLARD R. SMITH,	Hallsville, N. Y.,	2 Winants Hall.
PHILIP COOK THOMAS,	New Brunswick,	256 Seaman St.
JOHN HENRY THOMPSON,	New Brunswick,	137 Somerset St.
JOHN ALBERT THURSTON,	Pottersville,	24 Hertzog Hall.
IRVING S. TOMPKINS,	Boonton,	42 Gullden St.
FRANCIS CUYLER VAN DYCK, JR.,	New Brunswick,	84 College Ave.
THEODORE WILLIAM RUDOLPH VAN HET LOO,	Paterson,	Winants Hall.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
LEWIS AUGUSTUS ADAMS,	Lower Bank,	54 New St.
ERNEST EDWIN ARMSTRONG,	Elizabeth,	Elizabeth.
CHARLES FERDINAND BERGER,	Newark,	185 Winants Hall.
BERGEN DAVIS,	White House Station,	118 Winants Hall.
HOWARD DE MOTT,	Hackensack,	55 Winants Hall.
JOHN VAN NOSTRAND DORE,	Orange,	124 Winants Hall.
ABRAHAM CHARLES FOX,	Hurffville,	214 Seaman St.
JAMES EDWARD GIFFORD,	Hudson, N. Y.,	90 Winants Hall.
MOUNT DE BOW GRAVATT,	Clarksburgh,	40 Remsen Ave.
DANIEL HAND,	Cape May C. H.,	90 Winants Hall.
HOWARD GODFREY HARRIS,	Pleasantville,	54 New St.
RAYMOND STEELE HARRISON,	Verona,	116 Winants Hall.
DAVID NEWTON HENRY,	Danville,	5 Winants Hall.
JAMES KIRTLAND HOWARD,	New Brunswick,	151 Somerset St.
HARRY ALEXANDER HUNT,	Glen Gardner,	114 College Ave.
WILLIAM AMBROSE KINSEY,	Newark,	Newark.
DAVID LAYTON,	Liberty Corner,	137 Winants Hall.
ISAAC ARTHUR LEE,	New Brunswick,	162 Somerset St.
CHARLES TOWNSEND LETSON,	Stelton,	Stelton.
HOWARD LUDLAM,	South Dennis,	Chi Psi Lodge.
WILSON DAVIS LYON,	Bloomfield,	Zeta Psi House.
RUEL HAMPTON MERRILL,	Danville,	118 Winants Hall.
WARREN SMITH MITCHELL,	Vineland,	167 Church St.
THOMAS FRENCH RUSSUM,	Elizabeth,	Elizabeth.
WINFIELD CROWN SMITH,	South Orange,	137 Winants Hall.
YOSHIMARO TAKATSUJI,	New Brunswick,	21 Hardenbergh St.
GEORGE EDWARD TRACY,	Bayonne City,	133 Winants Hall.
FRED BENEDICT VAN BRAKLE,	Keyport,	90 Albany St.
GEORGE MOREHOUSE VAN DUZER,	Warwick, N. Y.,	87 Winants Hall.
HENRY HOUCK VON OLHAUSEN,	Elizabeth,	Elizabeth.
WALTER FARRINGTON WELLS,	Rahway,	Rahway.
LEONARD LOVEJOY WETMORE,	Englewood,	124 Winants Hall.
MARSHALL WILLIAMS,	Blackwood,	214 Seaman St.
JAMES ALBERT WOODWARD,	Elizabeth,	Elizabeth.
JOSEPH JOHNSON YATES, JR.,	Elizabeth,	Elizabeth.

## SPECIAL STUDENTS.

NOT CANDIDATES FOR A DEGREE.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JAMES EGBERT BEACH, <i>History, Political Science, Mental Philosophy.</i>	Harrison,	Harrison.
CHARLES VOORHEES BUTTLER, <i>Chemistry, Physics.</i>	New Brunswick,	20 Morris St.
MAURITZ FRED H. DE HAAS, <i>Chemistry, Physics.</i>	Brooklyn, N. Y.,	81 Winants Hall.
HENRY DUNCAN GARRETSON, <i>Electricity.</i>	Franklin Furnace,	17 Winants Hall.
JOHN ROYAL HEMION, <i>Electricity.</i>	Passaic,	381 George St.
THEODORE ROMINE LESTER, JR., <i>Chemistry.</i>	New Brunswick,	7 Bartlett St.
GEORGE AUGUSTUS OAKES, <i>Chemistry, Physics.</i>	Bloomfield,	Zeta Psi House.
PAUL QUATTLANDER OLIVER, <i>Classics, History.</i>	Bound Brook,	215 New St.
GEORGE ROBERT PERCY, <i>Classics, Physics.</i>	Jersey City,	61 Winants Hall.
JONATHAN MANNING ROBERTS, <i>Chemistry, Physics.</i>	South Amboy,	South Amboy.
ROBERT HASTINGS ROGERS, <i>Chemistry, Physics, Biology, History.</i>	Newark,	Newark.
ALBERT HENRY SCHLIEDER, <i>Classics, Mathematics, History.</i>	West Leyden, N. Y.,	40 Winants Hall.
AUGUSTUS HOBART SMOCK, <i>Classics, History.</i>	Glen Head, N. Y.,	17 Winants Hall.
ABRAHAM WILLARD TOTTEN, <i>Chemistry, Physics, German.</i>	Middlebush,	Middlebush.
BENJAMIN FRANKLIN WARD, <i>Mathematics.</i>	Hainesburg,	21 Hardenbergh St.

GRADUATE STUDENT.

<i>Name.</i>	<i>College.</i>	<i>Residence.</i>	<i>Room.</i>
JAMES ALBERT KELSEY, B.S., <i>Botany.</i>	{ Iowa Agricultural, }	Dunlap, Ia.,	356 George St.

SUMMARY.

Graduate .....	1
Seniors .....	41
Juniors .....	44
Sophomores.....	39
Freshmen .....	57
Specials.....	15
Total, 1890-91.....	197

## CLASSICAL DEPARTMENT.

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1. ADMISSION.

Examinations for admission to the College will be held on Monday and Tuesday of Commencement week, June 15th and 16th, 1891, beginning at 10 o'clock Monday morning. Applicants for admission may also be examined on Tuesday, September 22d, at 10 A. M. Students are advised to be present for examination in June.

From certain preparatory schools of approved standing, students are admitted upon the Principal's certificate.

Examinations for admission are both written and oral.

Candidates for admission to advanced classes must sustain a satisfactory examination upon the subjects previously studied by the class which they propose to enter, as well as upon those required for admission into the Freshman Class. Under this regulation, students are admitted at any time during the collegiate year.

Students who desire to pursue selected branches of study may do so, if properly prepared to pursue them with the regular classes. Special provision is made for such students in the Scientific Department. All such students are required to take examinations with the class with which they study, and sufficient work must be taken to occupy fully the student's time.

It is expected that students who present themselves will

be prepared, by careful study and by *reviews* of their work, to pass successfully a thorough examination on the subjects which are required.

*Only such students are admitted with conditions* as are, in the opinion of the examiners, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class.

Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that *all entrance conditions* will be made up before the Thanksgiving recess.

SLOAN PRIZES FOR THE BEST ENTRANCE EXAMINATIONS,  
CLASSICAL COURSE.

A FIRST PRIZE OF ONE HUNDRED DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills; and a SECOND PRIZE OF FIFTY DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills, will be awarded to the students who shall be adjudged by the examiners to have passed the best examination among the applicants for admission to the Freshman Class, in 1891. The cash prizes will be awarded, one-half at matriculation and one-half at the end of the second term of the Freshman year. The scholarship funds will be applied to cancel term bills for tuition during the course, and will be forfeited if the student's general average on the work of the year falls below 80 on a scale of 100.

These two cash prizes have been given for seven years by Hon. SAMUEL SLOAN, of New York, a member of the Board of Trustees.

## REQUIREMENTS FOR ADMISSION.

The following, or a full equivalent, are the requirements for admission to the Freshman Class :

## 1. GREEK.

Hadley's or Goodwin's Greek Grammar, including the principles of Prosody, and of *Accentuation*.

Xenophon's *Anabasis*—three books, or an equal amount of Goodwin's Greek Reader.

Whiton's First Greek Book, entire; and Jones's Exercises in Greek Composition or Alinson's Greek Prose, entire.

Homer—The *Iliad*, three books (omitting the catalogue of the ships).

Questions on the subject-matter, etc., as above.

*Greek History will be required, Smith's Smaller History of Greece, or an equivalent; students will be tested at the entrance examinations in reading at sight easy Greek prose; and a map of Greece, with a good knowledge of the geography of the Greek Islands and of Asia Minor, will be required.*

The applicant must be thoroughly familiar with the leading principles of the whole Grammar, including accent, quantity and prosody.

In pronunciation, the accent must be followed in prose; but in poetry, regard will be had only to quantity.

Work done in reading other authors than those named in the requirements will be accepted, provided the pupil can pass upon a full equivalent.

## 2. LATIN.

Allen and Greenough's, or Andrews and Stoddard's, or Gildersleeve's, or Harkness's Latin Grammar, including the principles of Prosody.

Jones's Latin Composition, or the first forty-four sections of Arnold's Latin Prose Composition, or an equivalent.

Cæsar, Four Books of the Gallic War [or Books I. and II. and Sallust's *Catiline*].

Vergil, *Æneid*, six Books.

Seven Orations of Cicero, of which it is recommended that the orations for the Poet Archias, on the Manilian Law, and for Marcellus, shall be three.

Questions on the subject-matter, the history, the geography and the mythology involved in the Latin read. *Students will be tested in reading "at sight" easy Latin (e. g., Cæsar, Sallust, Cicero, Quintus Curtius); and a Map of Italy, to be drawn from memory, at the examination, will be required, together with familiarity with the classical geography of Gaul and Spain; and Smith's Smaller History of Rome (or an equivalent history of this period) to the time of the Empire.*



In preparing in Latin, the student should give close attention to the regular prose constructions of the language, and especially, in reading Caesar or Sallust, to the forms of "indirect discourse." He should be thoroughly drilled in the use and the force of the moods and tenses, the consecution of tenses, the gerundive construction, etc., and should be taught to *analyze the sentence into subject and predicate, and the words, phrases or clauses which modify the subject and the predicate.*

The student should have as much exercise in writing Latin as possible. From the first, exercises in rendering English into Latin, both *orally* and in writing, are earnestly recommended.

The system of pronunciation followed is the Roman. For correctness of pronunciation, the rules of quantity are necessary to those who have not been thoroughly accustomed to the correct sound of the Latin words.

### 3. MATHEMATICS.

Arithmetic complete, including the Metric System.

Algebra through Quadratic Equations, including Radicals; or the first fifteen chapters of Bowser's College Algebra.

Plane Geometry—four books of Bowser's, or an equivalent, *including Exercises.*

Careful attention should be given to the *exercises* in Geometry, as they greatly aid in acquiring readiness in geometrical reasoning.

Attention is especially called to the Metric System of Weights and Measures, a practical knowledge of which is indispensable, since it is used in the class-room; and to the *essential importance of a thorough preparation in the elements of Algebra*, on which subsequent success in Mathematics so much depends. The mistake is often made of passing too hurriedly over the first few chapters of Algebra. The whole book will be more quickly and surely mastered if the first part be studied slowly and thoroughly, with frequent reviews.

In preparing in Mathematics the student should acquire a proficiency and readiness in the application of the principles; and to that end the careful solution of numerous and varied examples is earnestly recommended. It is also desirable to cultivate habits of neatness and order in the presentation of work on the blackboard or on paper.

### 4. THE ENGLISH BRANCHES.

Geography.

English Grammar.

Spelling.

History of the United States (Johnston's History of the United States).

Candidates for admission are examined in the History of the United States, with special reference to the colonization of the several States, the forms of

government which existed previous to the War for Independence, the causes and principal events of that war, the period of the Confederation, the establishment of the Federal Constitution, with the general history subsequent to that event.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

A short English Essay is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1891, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Tennyson's *Enoch Arden*; Shakespeare's *Tempest*; Goldsmith's *Vicar of Wakefield*; Wordsworth's *Happy Warrior*.

In 1892, students should be familiar with Shakespeare's *Hamlet*; Goldsmith's *Deserted Village*; Hawthorne's *Scarlet Letter*; Burns's *Collier's Saturday Night*.

## 2. COURSE OF INSTRUCTION.

The Course of Instruction occupies four years, with three terms in each year.

The following is a scheme of the studies of the course. While it is subject to change in details, it furnishes an exhibit of the amount of work required of students during the four years, and indicates to candidates for advanced standing the equivalents which will be accepted from them:

### FRESHMAN CLASS.

*Exercises during each term of the year in Composition, Declamation and Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

#### FIRST TERM, THIRTEEN WEEKS.

1. LATIN (4 hours a week).—Livy; Oral and Written Composition.
2. GREEK (4 hours a week).—Lucian's *Timon*; Sidgwick's *Greek Prose Composition*.
3. MATHEMATICS (4 hours a week).—Bowser's *Geometry*, from Book V.
4. RHETORIC (2 hours a week).—Kellogg; *Lectures*; *Essays*.
5. BIOLOGY (2 hours a week).—Comparative Biology; *Lectures*; *Physiology*, Martin.

SECOND TERM, THIRTEEN WEEKS.

1. LATIN (4 hours a week).—Cicero, *De Natura Deorum*, Book II.; Horace; Composition; Latin Synonymes.
2. GREEK (4 hours a week).—Demosthenes's *Olynthiac Orations*, 2d and 3d, and one *Philippic*; Sidgwick's *Greek Prose Composition*, continued.
3. MATHEMATICS (4 hours a week).—Bowser's *Geometry*, completed; *Algebra*, Bowser's.
4. ENGLISH LITERATURE (2 hours a week).—History of the English Language, Meiklejohn.
5. BIOLOGY (2 hours a week).—Comparative Anatomy; Lectures; Physiology, Martin.
6. ELOQUENCE.—Lectures and Declamations.

THIRD TERM, TEN WEEKS.

1. LATIN (4 hours a week).—Horace; Murray's *Mythology*, and Shumway's "A Day in Ancient Rome."
2. GREEK (4 hours a week).—Isocrates's *Panegyric*, Felton's Ed.; Wilkins's *Manual of Greek Prose*.
3. MATHEMATICS (4 hours a week).—Bowser's *Algebra* completed.
4. BOTANY (2 hours a week).—Gray.
5. ENGLISH LITERATURE (2 hours a week).—History of the English Language and Literature, Meiklejohn.
6. ENGLISH COMPOSITION.—Exercises.

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SOPHOMORE CLASS.

*Exercises throughout the year in Composition, Declamation and Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

FIRST TERM.

1. LATIN (4 hours a week).—Cicero, *De Legibus*, Book I.; Pliny's *Letters*; Latin Composition.
2. GREEK (4 hours a week).—Sophocles's *Oedipus Rex*; Wilkins's *Manual of Greek Prose Composition*.
3. INORGANIC CHEMISTRY (3 hours a week).—Lectures, with Experiments, Richter; Austen's *Lecture-Notes*.
4. MATHEMATICS (5 hours a week).—Wells's *Essentials of Trigonometry, Plane and Spherical*.

**SECOND TERM.**

1. **LATIN** (3 hours a week).—Tacitus, Selections from *Annales* and *Historiae*.
2. **GREEK** (3 hours a week).—Thucydides, one book; Wilkins's *Manual of Greek Prose Composition*.
3. **MATHEMATICS** (3 hours a week).—Bowser's *Analytic Geometry*.
4. **HISTORY** (4 hours a week).—Fisher's *Outline's*, with *Essays* by the Class.
5. **INORGANIC CHEMISTRY** (3 hours a week).—Lectures, with Experiments, Richter; Austen's *Lecture-Notes*.

**THIRD TERM.**

1. **LATIN** (4 hours a week).—Terence or Plautus; Catullus.
2. **GREEK** (4 hours a week).—Aristophanes's *Birds*, Felton's Ed.; Wilkins's *Manual of Greek Prose Composition* completed.
3. **MATHEMATICS** (3 hours a week).—Bowser's *Analytic Geometry*.
4. **HISTORY** (2 hours a week).
5. **INORGANIC CHEMISTRY** (3 hours a week).—Lectures, with Experiments, Richter; Austen's *Lecture-Notes*.

**JUNIOR CLASS.**

*Exercises throughout the year in Composition, Original Declamation and Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

**FIRST TERM—PRESCRIBED STUDIES.**

1. **GREEK** (3 hours a week).—Plato's *Phædo*, Wagner's Ed.; Buckholz *Anthology*. Bandchen II.
2. **MENTAL PHILOSOPHY** (4 hours a week).—Porter's *Elements of Intellectual Philosophy*, and *Lectures*; *Essays on Metaphysical Subjects*.
3. **PHYSICS** (2 hours a week)—Ganot; *Lectures*.
4. **GERMAN** (3 hours a week).—Whitney's *Brief German Grammar*.
5. **HISTORY** (2 hours a week).—The *English Constitution*.

**FIRST TERM—ELECTIVE STUDIES.**

At least one of which is to be pursued; the course in *Mathematics* and that in *Chemistry*, if chosen, hold throughout the year: the other electives are arranged with a course for each term:

1. **MATHEMATICS**.—*Differential and Integral Calculus*, Bowser.
2. **CHEMISTRY**.—*Experimental Chemistry*, Remsen; *Laboratory Practice*.
3. **ENGLISH**.—Sweet's *Anglo-Saxon Primer*; Chaucer.
4. **LATIN**.—Juristic; Select Titles from the *Corpus Iuris*; Morey's *Outlines of Roman Law*, Part II.
5. **FRENCH**.
6. **GENERAL BIOLOGY**.—*Lectures*; *Laboratory Practice*.

**SECOND TERM—PRESCRIBED STUDIES.**

1. **LATIN** (3 hours a week).—The Institutes of Justinian, or Gaius; The History of Roman Law—Morey's Outlines.
2. **MENTAL PHILOSOPHY AND LOGIC** (3 hours a week).—Porter's Elements of Intellectual Philosophy, and Lectures; Essays on Metaphysical Subjects: Logic—Jevons-Hill's Logic.
3. **PHYSICS** (2 hours a week).—Ganot; Lectures.
4. **GERMAN** (3 hours a week).—German Reader.
5. **ASTRONOMY** (3 hours a week).—Young's Elements.

**SECOND TERM—ELECTIVE STUDIES.**

At least one of which is to be pursued :

1. **MATHEMATICS**.—Calculus, Bowser.
2. **CHEMISTRY**.—Blowpipe Analysis, Nason; Lectures; Laboratory Practice.
3. **ENGLISH**.—Poetics.
4. **GREEK**.—Aristotle's Ethics, Books I. and II.
5. **FRENCH**.
6. **GENERAL BIOLOGY**.—Lectures; Laboratory Practice.

**THIRD TERM—PRESCRIBED STUDIES.**

1. **HISTORY OF CIVILIZATION** (4 hours a week).—Guizot; Essays.
2. **GERMAN** (4 hours a week).—Classic Authors, and a weekly Lecture on German Literature.
3. **PHYSICS** (2 hours a week).—Ganot; Lectures.
4. **ENGLISH LITERATURE** (2 hours a week).—English Authors.

**THIRD TERM—ELECTIVE STUDIES.**

At least two of which are to be pursued :

1. **GREEK**.—Buckholz Anthology, Part II.
2. **LATIN**.—First Division, Roman Law; Second Division, Roman Poets of the Republic.
3. **MATHEMATICS**.—Calculus, Bowser.
4. **CHEMISTRY**.—Qualitative Analysis, Crafts; Laboratory Practice.
5. **ENGLISH**.—Milton or Shakespeare.
6. **FRENCH**.
7. **METAPHYSICS**.

## SENIOR CLASS.

*Exercises throughout the year in Composition, Original Declamation and  
Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

## FIRST TERM—PRESCRIBED STUDIES.

1. MORAL PHILOSOPHY (4 hours a week).—Calderwood's Hand-book; Lectures; Essays.
2. POLITICAL ECONOMY (4 hours a week).—Walker and Perry; Lectures.
3. PHYSICS (2 hours a week).—Ganot; Lectures.
4. LECTURES (1 hour a week).—ON THE SCIENCE AND ART OF TEACHING, and on SOCIAL SCIENCE, HISTORY, ARCHÆOLOGY, etc.

## FIRST TERM—ELECTIVE STUDIES.

At least two of which are to be pursued; courses in Senior Elective work are chosen at the beginning of the first term and pursued for the entire year:

1. GREEK.—Selections from Aristotle's Organon with Porphyry's Isagoge.
2. ASTRONOMY.—Loomis's Practical Astronomy; Observatory work; Lectures.
3. PHYSICS.—Mechanics; Laboratory Practice.
4. MODERN LANGUAGES.—German; French.
5. CHEMISTRY.—Qualitative Analysis, Crafts; Laboratory Practice.
6. LATIN.—Vitruvius; Pliny the Elder; Classical Archæology; or, Methods in Latin Teaching.
7. HISTORY.—Comparative Study of the growth of Modern Constitutions.
8. BIOLOGY.
9. HEBREW (extra hours).

## SECOND TERM—PRESCRIBED STUDIES.

1. POLITICAL ETHICS; THE DUTIES OF CITIZENSHIP (4 hours a week).—Lieber and Woolsey; Lectures; Essays.
2. CONSTITUTION OF THE UNITED STATES (5 hours a week).—Cooley; Essays.
3. GEOLOGY (2 hours a week).—Geikie.

**SECOND TERM—ELECTIVE STUDIES.**

At least two of which are to be pursued :

1. **LATIN.**—Vitruvius ; Pliny the Elder ; Classical Archaeology ; or, Methods in Latin Teaching.
2. **ASTRONOMY.**—Loomis's Practical Astronomy ; Observatory Work ; Lectures.
3. **MODERN LANGUAGES.**—German ; French.
4. **CHEMISTRY.**—Quantitative Analysis, Classen ; Laboratory Practice.
5. **PHYSICS.**—Heat ; Electricity ; Laboratory Practice.
6. **GREEK.**—Plato's Republic.
7. **HISTORY.**—For the present Senior Class : American Constitutional Development.
8. **MINERALOGY.**—Crosby ; Lectures ; Class Work Practice.
9. **BIOLOGY.**
10. **HEBREW** (extra hours).

**THIRD TERM—PRESCRIBED STUDIES.**

1. **MORAL PHILOSOPHY** (4 hours a week).—The Evidences of Christianity ; Lectures on Practical Ethics.
2. **GEOLOGY** (4 hours a week).—Geikie.
3. **ARCHITECTURE** (3 hours a week, afternoon).—Lectures.

**THIRD TERM—ELECTIVE STUDIES.**

At least two of which are to be pursued :

1. **GREEK.**—Trendelenburg's *Elementa Logica*, Aristotle.
2. **MODERN LANGUAGES.**—German ; French.
3. **CHEMISTRY.**—Preparation of Chemical Substances ; Lectures ; Laboratory Practice.
4. **ASTRONOMY.**—Loomis's Practical Astronomy ; Observatory Work ; Lectures.
5. **PHYSICS.**—Sound ; Light ; Laboratory Practice.
6. **LATIN.**—Roman Archaeology ; or, Methods in Latin Teaching.
7. **HISTORY.**—The Historical Drama—Shakespeare, Schiller, etc.
8. **HEBREW** (extra hours).

### 3. REMARKS ON THE COURSE OF STUDY.

In the above Schedule all the studies of the Freshman and Sophomore years are prescribed, and are intended to be of such a character as will furnish the sound basis of a liberal education, whatever profession or career is subsequently chosen. During the Junior and Senior years, certain subjects are prescribed for all candidates for a degree, while other subjects are made elective, at least one of which must be pursued by each student, in the Junior year, and at least two in the Senior year.

#### HISTORY, POLITICAL ECONOMY AND CONSTITUTIONAL LAW.

**HISTORY.**—The study of History is begun in the Sophomore year with the use of a text-book giving the outlines of ancient history, followed by instruction in modern history, tracing the formation and growth of modern states. In this part of the course, a knowledge of historical geography is essential, and to this end a constant use of the historical atlas is required of the student. From time to time and increasingly as the class becomes familiar with the facts of history, and especially with the general relations of events, topics are assigned for special study, the results of such study by different members of the class and the various historical narratives which have been consulted are compared, the purposes and characteristics of historians pointed out, and instruction is given on the sources of history and historical methods.

The first term of the Junior year is given to a study of the English Constitution. In the third term Guizot's



History of Civilization in Europe is used as a text-book. In lectures before the class, attention is directed to the action and reciprocal influences of political forces. The subjects assigned for essays are intended to stimulate a desire to understand the ideas which underlie the causes of events and which give to history its continuity and unity.

For students of the Senior year and for graduates, the Professor of History has formed a class in which the methods of study will be those of the so-called historical "Seminary." The following may serve as examples of the nature of the subjects proposed for investigation in this class :

Methods of historical inquiry ; fields open to the American student for original historical research ; the nature of local government in England and America ; comparative study of local institutions in the United States ; the English Government in its theory and methods.

**POLITICAL ECONOMY.**—Instruction is given in Political Economy to the Senior Class in the first term by means of text-books, lectures and conversational discussions. The student is required to be familiar with the leading principles of this subject as presented by the author whose work is used as a text-book, and is then encouraged to study economical problems of the present time from the historical and, so far as may be, absolutely impartial standpoint.

**CONSTITUTIONAL LAW.**—The Senior Class will pursue the study of Constitutional Law in the second term. With the study of the present status of Constitutional

Law, a constant reference to the reports of decisions in the more important cases will serve to develop a familiarity with the processes of constitutional growth. Subjects involving constitutional questions will be assigned for the writing of essays.

During the same term the study of the History of the Constitution of the United States is pursued by the Senior Class of the Scientific Department.

**INTERNATIONAL LAW.**—The work of a French or German author will be made the basis of an exposition of the principles of International Law, while at the same time the acknowledged superiority of American and English authorities will be kept in view. The subject is taken up in the second term of the Senior year.

**MORAL PHILOSOPHY AND THE DUTIES OF CITIZENSHIP.**

Calderwood's Moral Philosophy is used as a text-book by members of the Classical section during a portion of the Senior year. The students are required to employ the Library in looking up references made in the text to various authors and their systems, and they are also encouraged to do their own thinking by offering such criticisms as may appear to them appropriate and can be supported by good reasons. The duties of morality and virtue are studied not as mere theories, but are enforced, as far as possible, upon the conscience and heart as the all-important principles of character in the conduct of daily life. The literature of the entire subject and the influence of leading doctrines advanced by opposite thinkers are fully discussed in running comments and lectures.

Lieber's Political Ethics is pursued during the first term by the members of both sections of the Senior Class. The obligations and principles of citizenship are here brought out as belonging not only to ordinary members of society, but especially to the educated man. To induce in every undergraduate the purpose to use his intelligence and conscience for the highest welfare of his country ought to form one of the essential features of collegiate training in a republic.

#### METAPHYSICS AND LOGIC.

**MENTAL PHILOSOPHY.**—Porter's Elements of Intellectual Philosophy is used as a text-book during the first term and a part of the second term of the Junior year. The characteristic doctrines of the distinctive schools in Ancient and Modern Philosophy are presented in a course of lectures upon the representative thinkers of these schools. Much attention is paid to the most important philosophical and metaphysical questions now at issue among speculators. The results of recent critical discussions, together with comments, are interspersed with the daily recitations.

**LOGIC.**—Jevons-Hill's text-book is used. Special care is taken to enforce a practical application of logical formulas in the resolution of arguments, and the detection of sophistries. To this end illustrative examples are drawn from different authors and much oral instruction is given.

#### GREEK.

The Classical Greek authors are read by the whole class during the entire Freshman and Sophomore years, and one term of the Junior year ; also, by students who elect Greek,

during the whole of the Junior and Senior years. The course is intended to embrace at least one complete treatise from a leading author belonging to each period from Homer to Lucian. While the amount read is distinctly indicated by the Catalogue, it is the purpose to vary the authors, or the portions from the same author, from year to year.

Promising students are encouraged to take special courses of study, in addition to the regular class work ; and private instruction, supplemented by an efficient library, is constantly given. The following books of reference are recommended : Smith's Classical Dictionaries, 6 vols. ; Jelf's Greek Grammar ; Krüger's Greek Grammar and Kühner's ausführliche griechische Grammatik ; Liddell and Scott's Lexicon, 7th Oxford Edition ; Grote's History of Greece, and Mahaffy's History of Greek Literature.

#### LATIN.

While the chief purpose kept before the student during the early portion of the course is the thorough mastery of the language, yet, as far as is practicable, the study of the history, institutions and literature of the Romans is pursued in connection with the Latin read. In the selection of text, care is taken to cover the principal periods of the literature, but chief prominence is given to those works which present the most valuable subject-matter for the student of Roman civilization and culture. In the latter portion of the curriculum special courses are given in Roman Oratory, Law, Philosophy, etc.

From the beginning of the course instruction is given in part by means of questions and answers in Latin. Optional

classes are formed for the better development of this method, and for the study of the History, Social Life and Institutions of the Romans.

During the Junior year, the student is introduced to the Roman Law. Students who so elect, read selected titles from the *Corpus Iuris*, and a text-book on the contents of the Law. The whole class study the *Ius Personarum*, and the historical development of the Law.

For students of the Senior year, there has been formed a class for the study of Classical Archæology. The method employed involves the reading of Latin authorities and essays by the student, with criticism and lectures by the Professor. The "Thomas L. Janeway, M.D., Memorial Collection" supplies copious illustrations.

Students should have Harper's or Lewis's Latin-English, and White's English-Latin Lexicons, a Classical Atlas, and Gow's "Companion to School Classics." The following works are also recommended: Fischer's Latin Grammar; Bruns, *Fontes Iurisprudentiæ Romanæ*; Huschke, *Iurisprudentiæ Antejustinianicæ Quæ Supersunt*.

#### MODERN LANGUAGES.

ENGLISH LANGUAGE AND LITERATURE.—The course in English embraces, with the elective study of Anglo-Saxon, the required study of the history of the English language and its literature, and the critical reading of English classics. A course of private reading is prescribed, upon which examinations are held. Essays in literary criticism are required during the Sophomore year. The elective study of the language and literature is pursued during the Junior year.

GERMAN is taught three hours per week, to students in both sections of the class, throughout the Junior year, and in addition to this, lectures are given upon German literature. During the first term, the grammar is the main object of study, with constant practice in the translation of illustrative sentences, both from German into English and from English into German. At the same time the student is required to learn day by day short vocabularies of commonly-used words, for conversational drill in the class-room. In the second term, easy German Prose is read both in set lessons and at sight, and in the third, the Classical Section studies selections from standard authors, both for careful translation and for literary analysis. For the Scientific Section, on the other hand, some scientific work is chosen, to enable them to acquire the technical vocabulary of science.

In the Senior year, German may be pursued as an elective study by the classical students; and German text-books are used with certain students in the Chemical Laboratory, and in the study of history and philosophy.

FRENCH is taught throughout the Freshman year, in the Scientific course, and is continued during the Sophomore and the Junior years, in the use of French text-books where practicable. The aim of the course is to make the grammatical and linguistic training in the study of this language as valuable to the student as possible; and to accustom him to use French books and periodicals with perfect freedom in his professional studies and work.

In the Classical Course, instruction in French is offered to those who wish to take it as a study outside the course,

and a course in French has been made an elective study for the Junior year.

**HEBREW.**—This language is taught as an extra study during the Senior year if any students desire to pursue it.

#### MATHEMATICS AND ASTRONOMY.

The required studies in Mathematics include Geometry, with problems and exercises in Geometrical invention, Algebra, Plane and Spherical Trigonometry with their application to problems in Surveying and Navigation, and Analytic Geometry. These are the mathematical studies of the first two years.

In the Junior year the study of the Calculus is elective.

Care is taken throughout that every principle shall receive a rigorous demonstration, and that it be applied as far as is practicable. No principle is thoroughly learned by the student until he can apply it.

**ELEMENTARY ASTRONOMY** is taught during the second term to all the members of the Junior Class. The study of Theoretical and Practical Astronomy, with the use of the instruments of the Observatory, is elective in the Senior year. It is desirable, though not essential, that those who intend to take elective Astronomy should take the elective Mathematics of the Junior year, that they may be prepared for lectures in the more advanced part of the course.

The **DANIEL S. SCHANCK OBSERVATORY** of Rutgers College is well equipped for the work of practical instruction, being supplied with a six and one-half inch refracting tele-

scope with position micrometer, a meridian circle with four-inch object glass, a repeating circle and other instruments. It is in telegraphic connection with other observatories.

The Observatory was designed and is used not only for independent work but for the *instruction of students in the theory and the use of astronomical instruments, and in practical observatory work*. It affords to students unusual facilities for learning how to use astronomical instruments.

#### PHYSICS.

This subject is taught by lectures, and copious additions are made to the matter of the text-book. Each point is demonstrated as far as possible; and the relations of the subject to ordinary natural phenomena, the processes of the industrial arts, etc., are pointed out. Students are encouraged to use the apparatus under the direction of the Professor in charge, and are trained to distinguish the essential from the casual conditions of experiments, as well as to infer from scientific data *no more* than is certain and warranted. The course begins with Mechanics and proceeds to Heat, Electricity, Sound and Light.

The apparatus is well fitted to illustrate all principles, and such additions are made to it as the industrial applications of science demand.

**ELECTIVE PHYSICS.**—During the Senior year of the Classical course, Physics is an elective study.

The object of this elective is to furnish a sound, practical foundation to those who expect to engage in industrial pursuits, or in professions which demand acquaintance



with the principles of Physics. The work consists of a course of laboratory exercises such as is set forth in Stewart and Gee's Practical Physics, besides many of the experiments described in the text-book used in the lecture course.

#### CHEMISTRY.

INORGANIC CHEMISTRY is taught by text-book and lectures. The course extends throughout the Sophomore year, three hours per week. The subject is introduced by experimental lectures on the volume composition of substances. Then follows a careful blackboard drill on the writing of empirical and constitutional formulas of acids, bases and salts. The elements are next taken up in lectures, followed by recitations. In all cases the aim is to illustrate *every point* experimentally, thus giving the student ample experience in rigid experimental demonstration. The students are required to take full notes of the lectures, and to sketch the apparatus used in the experiments. These notes are afterwards copied and handed to the Professor for examination, criticism and correction, training the student in accurate observation and facility and brevity of expression.

ELECTIVE CHEMISTRY.—In the Junior and Senior years, students may elect a course in Analytical Chemistry with Laboratory Practice and Lectures. The experimental studies in this department have proved both attractive and profitable to those intending to devote themselves to Law or Medicine, or to business pursuits, as well as to men who intend to teach or to pursue lines of work immediately connected with chemistry and its applications.

The pupil begins by making the experiments in Remsen's

Chemistry, thus acquiring by actual experience a familiarity with chemical substances and chemical phenomena.

The study of *Qualitative Analysis* is next taken up. The student makes the test, studies the reactions, and proceeds rapidly from analysis of simple substances to the more complex. The method here followed of keeping notes of every step affords the student valuable practice in the three divisions of experimental science—Experiment, Observation and Inference. The theory of analysis is explained in the lectures and recitations on the subject. In connection with this subject, *Blowpipe Analysis* is also taught. *Quantitative Analysis* now follows. The student having learned the means of detecting the constituents of a substance, proceeds to the determination of their amount. Pure salts of known composition are analyzed at first, so that the results may be compared with the theoretical percentages. A sufficient degree of accuracy having been obtained, substances of unknown composition, as minerals, metals, ores, waters, urines, poisons, fertilizers, coals, etc., are analyzed.

#### BIOLOGY.

REQUIRED.—Human Anatomy, Physiology and Hygiene are taught by means of recitations from a text-book ("The Human Body," H. N. Martin, Briefer Course) during the Freshman year, supplemented by lectures on General Biology, Comparative Zoology, Vertebrate Anatomy, etc., so far as the facts aid the student in his understanding of the human body. References to accessory reading are given, and numerous points are demonstrated by means of charts, models, specimens, dissections and experiments.

**ELECTIVE.**—Juniors and Seniors are given opportunity to elect advanced or laboratory work in Biology for one or more terms. These students select such topics from the Course in Biology of the Scientific School as they have time to work out. Each student will have a special course recommended to him, on consultation with the Professor in charge; but the subjects of such courses will be the same as those under consideration in the Laboratory, by the scientific students, at the hours thus specially arranged.

#### **BOTANY.**

In the Spring term of the Freshman year, Botany is taught two hours per week in the Classical course. Gray's "Revised Lessons" is used as the text-book in descriptive Botany, and in connection with this, the students familiarize themselves with the methods of plant analysis. Each point considered is, as far as possible, illustrated by living specimens either grown in the laboratory for purposes of dissection or collected in the fields and forests. Students are taught the methods of preparing and mounting specimens as abundantly seen in the College Herbarium.

#### **RHETORIC.**

**ELOCUTION.**—During the Freshman year, lectures are delivered on the general principles of Elocution, and a practical application of these principles is made by appropriate exercises in Declamation, in which the members of the class are carefully drilled. In addition to this, there are exercises in Oratory by all the students, both in the class-room and the College Chapel. The Freshman and

Sophomore Classes speak selected pieces; the Juniors and Seniors are required to deliver original orations.

In the department of Rhetoric, begun during the Freshman year, an effort is made to teach the principles of Composition, not as laid down in mechanical rules, but as springing from psychological laws and relations. Ideas presented in accordance with various mental requirements and influences are shown to contain the true philosophy of rational and effective discourse.

Illustrative references to the Masterpieces of Oratory, and to other forms of the best English Classical Literature, are freely given. Essays are required throughout the entire course.

#### EXTEMPORE SPEAKING.

The *Bussing Prizes* for excellence in *extempore* speaking, recently founded, are designed to cultivate the habit of presenting clearly, forcibly and accurately, and in a manner to convince an audience, the facts and ideas a student has upon themes with which he may fairly be supposed to be somewhat conversant. The repeated competitions for these prizes during the four years of the College course have already produced excellent effects.

#### ARCHITECTURE.

ARCHITECTURE is taught during the third term of the Senior year, and is illustrated by the stereopticon, showing the successive orders and styles which have prevailed among different people and at different times.

## ART LECTURES.

Beside the full and constant use of the stereopticon in the Professors' lecture-rooms, illustrating as freely as possible, by this means, the art of the world, and in addition to the course of lectures upon Architecture, for some years given to the Senior Class, there will be given in the Winter term, this year, a course of lectures upon Modern French Art, by John C. Van Dyke, L.H.D., Art Critic and Author, and Librarian of the Gardner A. Sage Library.

## PHYSICAL DEVELOPMENT.

GYMNASIUM.—The excellent *Gymnasium* in Suydam Hall, three minutes' walk from the College buildings, by the courtesy of the Theological Seminary of the Reformed Church, has been open to the daily use of the students of Rutgers.

A thoroughly qualified Instructor is in attendance, and students of the two lower classes are required to take systematic exercise in the Gymnasium, under his direction and supervision.

ATHLETICS.—In order to secure for the students the benefits of out-of-door exercise, athletic sports are encouraged by the provision of adequate facilities. Rightly controlled, such sports have shown themselves beneficial both to the health of the students and to the quality of the work done, and are manifestly in the interest of good order. The more prominent athletes have been generally among the more earnest and successful students. The proper control of athletics has been secured by the organ-

ization of an incorporated athletic association, supported by the students and managed by a board of nine trustees, chiefly composed of resident alumni. In this board the Faculty has always had one or more representatives (at present it has three), and in this way a cordial co-operation has been steadily maintained between Faculty and students, avoiding the need for the exercise of direct authority.

**THE NEW ATHLETIC FIELD.**—By the generosity of Mr. James Neilson, of New Brunswick, an alumnus and trustee of the College, there is now provided an athletic field containing more than five acres and at a walking distance of about eight minutes from the College campus.

This field is at present being leveled, and it is the purpose of the association to fence it and erect upon it a commodious grand stand with dressing-rooms and bath-rooms attached, a suitable ticket office and gateway, and a small house for the accommodation of a regular janitor.

To this end, a fund of \$5,000 has been raised among the Faculty, under-graduates and alumni, and it is expected that the work can be completed in time for occupancy in the spring.

# SCIENTIFIC DEPARTMENT.

## RUTGERS SCIENTIFIC SCHOOL.

BY ACT OF THE LEGISLATURE CONSTITUTED THE STATE COLLEGE FOR THE  
BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS.

### BOARD OF VISITORS.

(APPOINTED BY THE GOVERNOR.)

#### FIRST CONGRESSIONAL DISTRICT.

	<i>Residences.</i>
HON. THOMAS H. DUDLEY, . . . . .	Camden.
JAMES NEWELL, . . . . .	Salem.

#### SECOND CONGRESSIONAL DISTRICT.

WILSON D. HAVEN, ESQ., . . . . .	Trenton.
WILLIAM F. MORGAN, ESQ., . . . . .	Palmyra.

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WILLIAM R. WARD, ESQ., . . . . .	Newark.

#### SEVENTH CONGRESSIONAL DISTRICT.

ABRAHAM W. DURYEE, ESQ., . . . . .	New Durham.
JAMES STEVENS, ESQ., . . . . .	Jersey City.

### 1. CONDITIONS OF ADMISSION.

Every applicant for admission must be at least sixteen years of age, and must submit to the President proper testimonials of a good moral character. If an applicant for a State Scholarship, he must also present to the President a certificate of appointment from the County Superintendent.

Examinations for admission will be held on the same days as for the Classical Department, viz. : On the Monday and Tuesday preceding Commencement, June 15th and 16th, 1891, beginning at 10 o'clock A. M. on Monday, in the President's office. Applicants for admission may also be examined on Tuesday, September 22d, at the same hour and place ; but all students who can conveniently do so, are advised to be present in June.

From certain preparatory schools of established reputation students are admitted without examination, upon the Principal's certificate that they have completed the required amount of work and are prepared to enter College. Blanks for such certificates will be furnished upon application to the Registrar, Mr. IRVING S. UPSON, or to the President of the College. Students may enter an advanced class either at the beginning of the College year or at other times, on condition that they sustain a satisfactory examination both on the preliminary studies and on those already passed over by the class which they propose to enter.

Provision is made for such students as wish to devote themselves to special subjects, if they are prepared to study profitably with the regular classes in those subjects ; *but special students are required to take sufficient work fully to occupy their entire time.*



## REQUIREMENTS FOR ADMISSION.

The following are the subjects in which those who wish to enter the Freshman Class of the Scientific Department are examined. Since all are such as can be acquired in our best common schools, *it is insisted that the preparation in them shall be thorough and complete.* The general regulations as to conditions and their removal will be the same as those which apply to the Classical Course, and may be found on page 18.

1. ARITHMETIC.—Fundamental Operations; Common and Decimal Fractions; Denominate Numbers, including the Metric System; Percentage, including Interest and Discount; Proportion; Square and Cube Root.

2. ALGEBRA through Arithmetic, Geometric and Harmonic Progressions, or the first seventeen chapters of Bowser's College Algebra.

3. PLANE GEOMETRY.—The *whole* of Plane Geometry will be required.

4. ENGLISH GRAMMAR—including Spelling.

5. DESCRIPTIVE GEOGRAPHY.

6. PHYSICAL GEOGRAPHY.

7. HISTORY OF THE UNITED STATES.—Johnston's *History* of the United States, or its equivalent.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

8. Such a knowledge of Elementary PHYSICS and CHEMISTRY as may be obtained from Peck's *Ganot's Physics*, or Wells's *Natural Philosophy*, and Valentine's *Twenty Lessons in Chemistry*, or Cooley's or Steele's *Chemistry*, is required for admission.

9. A short ENGLISH ESSAY is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1891, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Tennyson's *Enoch Arden*; Shakespeare's *Tempest*; Goldsmith's *Vicar of Wakefield*; Wordsworth's *Happy Warrior*.

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In 1892, students should be familiar with Shakespeare's *Hamlet*; Goldsmith's *Deserted Village*; Hawthorne's *Scarlet Letter*; Burns's *Cotter's Saturday Night*.

*In preparing the student for this course, it is recommended that he be drilled thoroughly in Arithmetic, as a clear understanding of its simple elementary and practical principles is essential to a good Mathematician. His preparation in Algebra should be very thorough. In addition to understanding the PRINCIPLES of the science, he must fix them in his memory, and learn their bearing and utility, and for this reason he should pay great attention to the solution of practical examples. What is needed is ability to solve ordinary examples with facility and to explain them thoroughly.*

Attention is specially called to the solution of Simultaneous Quadratic Equations, and of Equations of Higher Degrees than the Second, which may be reduced to the quadratic form, and then solved by the methods of solving quadratics.

## 2. COURSES OF STUDY.

Six distinct courses of study are included in the schedule which follows:

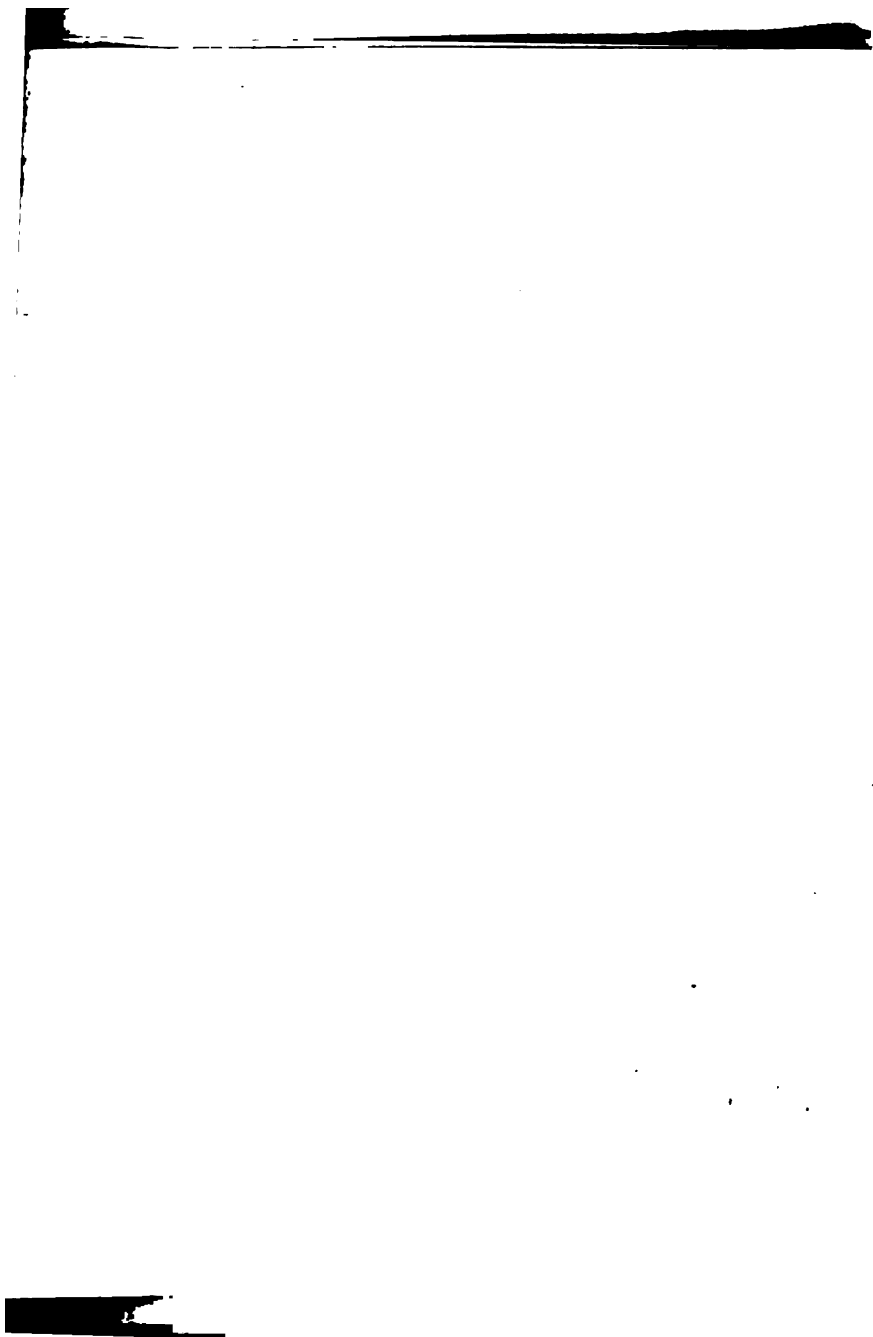
- I. A COURSE IN AGRICULTURE.
- II. A COURSE IN CIVIL ENGINEERING AND MECHANICS.
- III. A COURSE IN CHEMISTRY.
- IV. A COURSE IN ELECTRICITY.
- V. A COURSE IN BIOLOGY.
- VI. A WINTER LECTURE COURSE IN AGRICULTURE.

During the first year the studies of the five full courses are nearly the same, and are designed to furnish a suitable introduction to the pursuit of the higher branches in either.

### COURSE IN AGRICULTURE.

The object of this course is to provide a broad scientific training, which is now recognized as essential to the best life on the farm.

During the Freshman and Sophomore years the student is instructed in business methods, relations of weather to



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farming, care and management of farm animals, their adaptability to the various purposes and conditions, and their general economical relations. The study of the principles of scientific agriculture and their application to the different lines of farm practice, is continued throughout both the Junior and Senior year. The elements contained in the atmosphere and soil being the basis of all vegetable and animal life, the student is instructed in the transformations which take place in these elements in the production of crops, in the growth of animals, and in the principles which govern their conversion into products of the highest economic value.

Johnson's "How Crops Feed" and "How Crops Grow" and Armsby's "Cattle-Feeding" and other suitable textbooks are used, though the instruction, in both the principles and their application, is imparted mainly by lectures.

#### COURSE IN CIVIL ENGINEERING AND MECHANICS.

During the last three years, the students in this course are instructed in Railroad Curves, Descriptive Geometry, Analytic Geometry, Differential and Integral Calculus, Analytic Mechanics, Civil Engineering, Bridge-Building and Geodesy; and have practice two afternoons a week in Draughting, with Exercises and Problems in Geometrical Constructions, in Descriptive Geometry, Topographical, Mechanical and Architectural Drawing, and in Graphical Statics.

Students in this course, and in the Chemical and Agricultural Course, in addition to the special and technical studies of their course, pursue such studies in English,

Rhetoric, Elocution, French or German, Metaphysics, Moral Philosophy, the Duties of Citizenship and the Natural Sciences as are calculated to make them broadly educated and intelligent citizens, and not mere narrow specialists.

The course of study for the first year in this department is arranged so as to be complete in itself. It is especially designed to meet the wants of those who cannot take the entire four years' course, but who desire to fit themselves for Land Surveying. Students leaving at this period of the course, receive from the Faculty a certificate of their attainments.

#### COURSE IN CHEMISTRY.

During the last three years, the students in this course are instructed in General, Experimental, Theoretical, Organic and Applied Chemistry, Stochiometry, Determinative Mineralogy, Blowpipe Analysis, Analytical Chemistry, including the Analysis of Ores, Minerals, Coals, Waters, Technological Products, Soils, Fertilizers, Agricultural Products and Foods, Poisons, Urine and Animal Products, and the Preparation of Pure Chemical Substances. Instruction is also given in Spectrum Analysis and Microscopical Examination. The course of study depends, to some extent, upon the student's future pursuit in life.

EXPERIMENTAL CHEMISTRY is taught in the recitation-room by carefully conducted quizzes and full work in the Laboratory. The student's first and general knowledge of chemistry is obtained by his own observation.



**BLOWPIPE ANALYSIS** comprises the study of the various reactions and the analysis of a number of substances. The laboratory work is accompanied with constant quizzing in the recitation-room.

General Chemistry, see page 37.

Qualitative Analysis, see page 38.

Quantitative Analysis, see page 38.

**STOICHIOMETRY**, the mathematics of chemistry, is taught by lecture, recitation and blackboard drill. During the course, a large number of problems are given for solution, special attention being paid to those occurring in technical work.

**ORGANIC CHEMISTRY** is taught by lectures, recitations and laboratory work. Beginning with the determination of the molecular weight of organic compounds, the student is led to examine the principles of substitution, valence and structure of organic compounds. As the various substances are considered, their relations to vegetable and animal life and to agriculture are pointed out. Attention is also given to their practical applications, as in food, medicines, dyeing and in manufactures generally. The lectures are accompanied by full experimental illustrations.

**PHYSIOLOGICAL CHEMISTRY** is made the subject of lectures and class-room work. The chemical processes of animal and plant life are fully explained.

**APPLIED CHEMISTRY.**—The applications of Chemistry to the arts and manufactures are taught by lectures and

text-book. Whenever it is practicable, the actual products are exhibited to the students, and the manufacturing processes reproduced in miniature. Attention is drawn to the scientific relations and connections between the various manufactures. The great losses by imperfect methods of manufacture and by waste products are pointed out, and the student is taught to see the true economy of production. Illustrative of the lectures, visits are made to various manufacturing establishments, of which there are a number in and about New Brunswick, and an opportunity is given to see manufacturing operations in actual working.

Principles and Theories of Chemistry are discussed and explained in a course of lectures to the Senior Class. A certain amount of the history of chemistry is also considered.

#### COURSE IN ELECTRICITY.

This course is nearly the same as that in Engineering, Physical Laboratory Practice being substituted for Railroad Curves, Bridge Building and Geodesy, and for part of the afternoon work in Draughting. This preparation for ordinary mechanical emergencies enables graduates to take such positions as do not demand the full mechanical and mathematical equipment of a professional electrical engineer. And those who intend to pursue Electrical Engineering after graduation are furnished with the necessary practical basis. Manual skill and preference for mechanical details are prime requisites for electrical pursuits, hence, those who enter the course will be required to do the most exact work possible, and expected to show cheerful patience in tedious manipulations.

## COURSE IN BIOLOGY.

The biological studies of this course fall into three departments, *General Biology*, *Botany* and *Entomology*.

**GENERAL BIOLOGY.**—Here is included a study of the lowest forms of life, comparing plants and animals, a study of General Zoology and a study of Human Biology. In the Freshman year, Human Anatomy, Physiology and Hygiene are taught from a text-book ("The Human Body," H. N. Martin, Briefer Course), supplemented by lectures upon General Biology of the lower forms of life, Comparative Zoology, Vertebrate Anatomy, etc., to aid the student in acquiring a clear comprehension of Human Biology. References to accessory readings are given, and numerous points are demonstrated by means of charts, models, specimens, dissections and experiments.

In the Junior year, Fall term, the advanced or Laboratory Course begins, with a study of the following topics: *Fermentation, Bacteria, Algae, Fungi, Alternate Generation, Amaba, Vorticella, Hydra, Starfish, Earthworm, Clam, Lobster*, and lectures on the Zoology of the Invertebrates.

In the Winter term the work covers the following topics: *Fish, Frog, Turtle, Pigeon, Cat, Development of the Chick*, and lectures upon Vertebrate Zoology.

In the Senior year, Fall term, the work opens up with the study of the skeleton of one or more of our domesticated animals, followed by a special study of *Comparative Osteology*. In the Winter term the dissection of one or more of our domesticated animals introduces the general subject of the *Comparative Anatomy and Embryology of the Vertebrates*. Supplementary lectures are given upon

the Economic Applications of Zoology, Stock-breeding, the Theory of Heredity, the Doctrine of Development, Palæontology, etc., with especial reference to the needs of Agricultural students. Students pursuing the course in Agriculture are required to take only a portion of the work of these two years, but will be given opportunity to devote nearly all their time while in the biological laboratory, both in their Junior and Senior years, to the work outlined for the Senior year of the course in Biology.

Among the numerous guides and works of reference accessible to students while at work in the laboratory, the following books are most important:

"Practical Biology," by Huxley, Martin, etc.; "Elements of Embryology," by Foster and Balfour; Nicholson's "Manual of Zoology;" Claus-Sedgwick's "Text-book of Zoology;" Marshall and Hurst's "Practical Zoology;" Wiedersheim's "Comparative Anatomy of the Vertebrates;" Martin and Moale's "Hand-book of Vertebrate Dissections;" Howe's "Atlas of Biology;" Howell's "Dissection of the Dog;" Wilder and Gage's "Anatomical Technology of the Cat;" Brook's "Hand-book of Invertebrate Zoology;" Sedgwick and Wilson's "Biology;" Osborn's "Invertebrate Dissections."

**BOTANY.**—In the Spring term of the Freshman year, Botany is taught two hours per week. Gray's "Revised Lessons" is used as the text-book in descriptive Botany, and in connection with this, the students familiarize themselves with the methods of plant analysis. Each point considered is, as far as possible, illustrated by living specimens, either grown in the laboratory for purposes of

dissection or collected in the fields and forests. Students are taught the methods of preparing and mounting specimens as abundantly seen in the College Herbarium.

In the Sophomore year, Spring term, the students make a collection of mounted specimens as a permanent and useful record of their field work.

During the Junior year a course of laboratory practice is pursued in minute vegetable anatomy with the compound microscope, and instruction by lectures is given in the physiology of plants. A short course in Cryptogamic Botany concludes the work of the year.

The Seniors continue the laboratory work upon Vegetable Pathology, and become familiar with some of the most destructive fungous diseases of plants.

ENTOMOLOGY.—This subject will be taken up in the Junior year, after the student has become familiar with methods of study in the lower animals and in plants, and has learned the use of the microscope and dissecting tools.

The instruction will be by lectures and Laboratory work. No text-book will be used; but special works of reference on the subjects under consideration will be available, and must be consulted. Recitations will be from lecture-notes and from notes made in the Laboratory work.

The aim will be to give the student a general knowledge of Insect Anatomy, and of the characters upon which the classifications are based. The habits of insects, their modes of development, and their systematic relations, will all be considered, and the economic problems will receive due attention.

The student will be required to make an original study of some species or group of insects, or of some anatomical or morphological subject connected therewith, and to prepare an essay on the subject studied.

WINTER LECTURE COURSE IN AGRICULTURE.

The New Jersey State Agricultural College has established a six weeks' Lecture Course in Agriculture, which is designed to teach those general principles which underlie reasonable farm practice, and their adaptation to the various lines of farming. The course, while primarily intended for farmers' sons, will also be open to such farmers of the State as may desire to attend. In the preparation of the course it has been the aim of the College to make the instruction scientific in its character, but of such a nature as to be directly applicable to the every-day work of the farm, and will embrace the following subjects :

AGRICULTURE.—Twenty lectures, in which will be discussed : Soils—Their Character and Preparation for Crops. Rotation of Crops. The Culture of Forage Plants. Systems of Soiling. Farm-Yard Manures—Their Preparation and Use. Commercial Fertilizers—Including the Sources and Composition of Nitrogenous Materials, Phosphates, Potassium Compounds, Lime, etc. Farm Stock—Methods of Feeding and Study of Food ; Dairying.

BOTANY AND HORTICULTURE.—Twenty lectures. Plant Life in General. The Seed—Its Structure and Uses. Germination of Seeds—Buds, Kinds and their Development. Leaves—Structure and Uses. Stems—Kinds, Formation

and Uses. Roots—Methods of Growth and Functions. The Flower—The Various Parts and Uses of Each. Fertilization—Crossing, Origin of New Sorts, etc. Fruits—Kinds, Structure and Uses. The Microscopic Structure of Plants—Cells and their Growth. Kinds of Plants—Their Relationships and Classification. How to Determine the Botanical Names of Plants—Fungi and Other Lower Forms of Plants. Fungous Diseases of Cultivated Crops. The Rusts and Smuts of Grains and Grasses. Mildews of Grape, Gooseberry, etc. The Pear and Apple Blight, Potato Rots, Anthracnose of Grape, Raspberry, etc. In short, as full a course as time will permit of the worst fungous enemies, with the known practical remedies for each and their application.

**ENTOMOLOGY.**—Twenty lectures. The course in Entomology will consist of two parts. In the first the Principal Characters of the Insects will be detailed. The Gross External Anatomy will be described, and the Bearing of Structure on Systematic Classification will be brought out. Especial attention will be paid to those features which will enable the student to recognize the probable friendly or hostile character of any observed species.

The second part of the course will apply the lessons of the first part to the Practical Needs of the Agriculturist. The Principles of Economic Entomology will be carefully brought out, and the Philosophy of Preventive and Destructive Applications will be explained. No more will be given in Part 1 of the course than is necessary to understand Part 2.

**BIOLOGY.**—Twenty lectures. The Skeletons of the Cat, Dog, Pig, Sheep, Ox, Horse and Fowl Compared. Hygiene of the Skeleton. Effects of Exercise on Muscles and Fattening. Foods—Their Kinds and Nutritive Value. Changes Undergone by Foods in Digestion. The Blood and Circulation. Diseases of Digestion and of the Circulation. The Theory of Germ Diseases. Respiration and Excretion. Diseases of the Lungs and Kidneys. The Nervous System and Organs of Sensation. The Reproductive Organs. Development of Mammals and of Birds Compared. The Laws of Heredity and Stock-Breeding. The Economic Relations of Animals to Each Other and to Man.

**PHYSICS.**—Five lectures. Illustrating the Application of Physics in Agricultural Relations, Water-Supply, Farm Implements, Ventilation and Lighting of Buildings, Farm Motors, etc.

**MECHANICS.**—Five lectures on the Construction of Farm Roads, Bridges, Buildings, etc.

**CHEMISTRY.**—Lectures on the Elementary Principles of Agricultural Chemistry.

**REQUIREMENTS AND EXPENSES.**—No entrance examination will be required. All applicants should be at least sixteen years of age and have a common-school education.

Board, with furnished room, can be obtained in New Brunswick for \$4 to \$7 per week ; board, without room, for \$3 to \$5 per week.

A few text-books may be desirable, but none will be required.



The course will open Tuesday, February 3d, 1891, and close Friday, March 13th. The lectures will be given during afternoon hours, beginning at 2 P. M.

#### MILITARY DEPARTMENT.

This department is in charge of the Professor of Military Science and Tactics, an officer of the regular army, detailed by the War Department for the purpose.

Instruction is both practical and theoretical.

**PRACTICAL.**—The student, on entering College, is drilled in the School of the Soldier, including bayonet exercise, and is advanced, successively, to the Schools of the Company and Battalion.

Considerable attention is given to target practice, the College being supplied with latest-model Springfield rifles and a liberal supply of rifle ammunition.

**THEORETICAL.**—In the Sophomore year, a study is made of Upton's Infantry Tactics.

During the Junior and Senior years, elementary instruction, by means of lectures and recitations, is given in the Art and Science of War, Modern Tactics, Modern Small Arms and Cannon, Explosives, Castramentation, Military Correspondence and Reports, Care of Troops in the Field, Military and Martial Law and other military subjects.

**UNIFORM.**—A uniform consisting of cap, blouse and trousers of dark-blue cloth, has been adopted, the cost of which is considerably less than that of a good suit of civil-

ian's clothes. The entire suit is neat and serviceable, and, while required to be worn at drills, may be worn on any occasion.

MILITARY DRILL is required of all students in the Scientific Department, except as they may be excused by reason of conscientious scruples, physical disability or some similarly valid reason.

The object of instruction in this department is not only to comply with the requirements of the laws of Congress for the State Colleges organized under the Act of July 2d, 1862, but also to improve the health and physique of students, and to give that elementary military knowledge which every citizen should possess, that he may render intelligent and effective aid to his country or State in case of war or riots.

#### ANNUAL REPORT OF THE SCIENTIFIC DEPARTMENT.

More extended information as to the studies and courses in the Scientific School will be found in the Annual Report of the New Jersey State Scientific School to the Legislature of New Jersey, which will be sent to any address on application.

### 3. ORGANIZATION.

This department of the College has been designated by the Legislature of New Jersey, in accordance with the law of Congress,

THE STATE COLLEGE FOR THE BENEFIT OF AGRICULTURE  
AND THE MECHANIC ARTS.

FREE SCHOLARSHIPS.

Under the law, a certain number of students from the State of New Jersey are received into this department of the College, and educated *free of expense for tuition*. This law also provides for the appointment by the Governor of a Board of Visitors, two from each Congressional District, who possess general powers of supervision and control. The State pupils are admitted to free scholarships on the recommendation of the Superintendent of Schools in each county, and on passing the required examinations. These free scholarships are distributed among the counties in proportion to their population, as follows :

STATE SCHOLARSHIPS.

ATLANTIC, . . . . .	1	MIDDLESEX, . . . . .	2
BERGEN, . . . . .	1	MONMOUTH, . . . . .	2
BURLINGTON, . . . . .	3	MORRIS, . . . . .	2
CAMDEN, . . . . .	2	OCEAN, . . . . .	1
CAPE MAY, . . . . .	1	PASSAIC, . . . . .	2
CUMBERLAND, . . . . .	1	SALEM, . . . . .	1
ESSEX, . . . . .	6	SOMERSET, . . . . .	1
GLOUCESTER, . . . . .	1	SUSSEX, . . . . .	1
HUDSON, . . . . .	6	UNION, . . . . .	2
HUNTERDON, . . . . .	1	WARREN, . . . . .	1
MERCER, . . . . .	2		<hr/> 40

In June, 1888, the Trustees, to express their appreciation of the action of the Legislature in making the first appropriation yet made to further the work of the State College, voted to give to the young men of New Jersey

TEN ADDITIONAL FREE SCHOLARSHIPS "AT LARGE."

By a law passed March 31st, 1890, establishing

A FREE SCHOLARSHIP FOR EACH ASSEMBLY DISTRICT EACH YEAR,  
provision is made for affording the advantages of a liberal course of study in the State Agricultural College to the students in the schools in all parts of the State, who shall be selected as follows: "A competitive examination, under the direction of the City Superintendents and the County Superintendent of Education, in each county, shall be held at the County Court House in each county of the State, upon the first Saturday in June in each year."

The law provides that if several properly qualified candidates for appointment pass the examination from the same Assembly District, all who are suitably qualified shall receive appointment to such free scholarships, excess from certain Assembly Districts being counterbalanced by vacancies in other Assembly Districts, provided only that the entire number of appointees shall not exceed the entire number of free scholarships created by the State.

Letters of inquiry to the President, or to MR. IRVING S. UPSON, Registrar, will receive careful attention.

THE NEW JERSEY STATE AGRICULTURAL COLLEGE  
EXPERIMENT STATION.

By the Act of Congress of March 2d, 1887, a law was passed entitled "An act to establish Agricultural Experiment Stations in connection with the Colleges established in the several States under the provisions of an act approved July 2d, 1862, and of the acts supplementary thereto." This act is commonly known as the "Hatch

Act," from the active interest taken in its passage by Hon. William H. Hatch, M.C., of Missouri. It authorizes the appropriation of \$15,000 annually for the support of Agricultural Experiment Stations in connection with the Colleges which were established in the several States "for the benefit of Agriculture and the Mechanic Arts," by the Congressional Act of July 2d, 1862.

The Legislature of New Jersey, by its acts of March 16th, 1887, and of March 5th, 1888, designated the Trustees of Rutgers College "as the parties to whom all moneys appropriated by Congress under said acts of Congress or supplements thereto shall be paid for the purposes mentioned in said acts of Congress." The department of Rutgers College known as Rutgers Scientific School, is, by law, the State Agricultural College. The Agricultural Experiment Station is established in connection with it.

Already the Station is organized and at work. By the co-operation of the State Experiment Station, a large and well-fitted laboratory has been erected, and is already occupied. Investigators have been appointed upon the insect enemies of plants, upon the food-products of our fresh and salt waters, and their improvement, upon the geology and chemistry of our soils, and the effect of tillage and fertilizers upon them, upon the diseases of plants, and the application of science to the growth of agricultural and horticultural products, and upon the food consumption and the value of the products of the best five breeds of dairy cattle.

While the main business of such a Station is in searching after new truths, and arranging them for practical and

economic use, the proper location for it is in connection with an institution of learning. Almost all our investigators are teachers. The investigation and diffusion of knowledge necessarily go hand in hand ; and the example of men devoted to the searching for useful truths is stimulating to those who are yet in their preparatory studies, and are aspiring to fill well their places in life.

It is from those now preparing that our future investigators must come, and it is important that they should have those who are now in the field of work directly before them. In this respect it is believed the location of the Station at the College will be most salutary in its influence.

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## EXAMINATIONS.

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The classes in both departments are examined at the close of each term. These examinations are partly oral and partly written, and have an important bearing upon the standing of the student in his class.

*Unexpected examinations at irregular intervals* are held at the discretion of each instructor. The object of these examinations is to cultivate the habit of considering the relations of each day's work to what has been done before, and to stimulate effort on the part of each student to gain a comprehensive knowledge of the subjects studied.

At the end of the first and third terms, the examinations of the classes of the Scientific Section are held in the

presence of the Board of Visitors, who then make their semi-annual visits to the institution.

At the end of the third term, each member of the Graduating Class of the Scientific Section is required to present a thesis on some scientific subject, a copy of which is written out upon paper suitable for binding, and deposited in the College Library.

The final examination of the Graduating Classes is held four weeks before Commencement, from which time they are subject to such duties as are required for their preparation for Commencement.

*Students who receive conditions at the June Examinations must report at College prepared to be examined upon the whole of each of the subjects on which they have conditions, at 10 A. M. on the Tuesday before College opens, in September.*

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## GRADUATION.

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To all members of the Graduating Class of the Classical Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Arts.

To all members of the Graduating Class of the Scientific Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Science.

To all members of the Graduating Class, in either Department, who have satisfactorily pursued special courses of study, a certificate is granted stating the studies pursued and the attainments made.

The following regulations have been adopted by the Board of Trustees regarding the graduating exercises at Commencement :

1. The privilege of speaking at Commencement shall be limited to eight men, and shall be open without distinction to the Classical and Scientific Sections of the Graduating Class.

2. The graduating honors shall be as follows :

FIRST HONOR, . . . . .	Valedictory.
SECOND HONOR, . . . . .	Latin Salutatory.
THIRD HONOR, . . . . .	Philosophical Oration.
FOURTH HONOR, . . . . .	Scientific Oration.

3. These honors and orations shall be awarded in the order named, according to grade made up of the combined marks in all the subjects of the course.

4. An oration to be known as the RHETORICAL HONOR shall be awarded to that member of the class who shall have received the highest grade in Composition and Elocution during the Junior and Senior years, *provided* he rank in general grade of scholarship among the first half of his class.

In case the Rhetorical Honor shall fall to one who has also taken one of the four honors for scholarship, an additional speaker shall be appointed according to general grade as fifth in scholarship.

5. Three other orations shall be awarded according to grade in Composition and Elocution, during the Junior and Senior years, *provided* the recipients rank among the first two-thirds of the class in general grade of scholarship.



## DEGREES AND POST-GRADUATE STUDIES.

The degrees of A.M. and M.S. are no longer given "in course," but only for work done.

The Faculty will recommend for the degree of Master of Arts or Master of Science candidates otherwise properly qualified, who, after taking the appropriate Bachelor's degree—

1. Shall pursue for at least one year at Rutgers College a course of liberal and non-professional study, approved by the Faculty, and shall, beside the term examinations, pass a thorough examination on that course and present a thesis on some topic connected with it ; or,

2. Who, not less than three years after taking the Bachelor's degree at Rutgers College, shall make application for the Master's degree, presenting at the same time a certificate of graduation from a Theological Seminary, a Law School or a Medical School, or of admission to the practice of Law or Medicine ; or,

3. Satisfactory evidence of successful labor in that field of education or literature which may have been permanently chosen ; or,

4. In case of Bachelor of Science, satisfactory evidence of successful professional work actually done and advanced professional studies prosecuted.

The degrees of Ph.D. and D.Sc. may be conferred upon resident graduates of the College who shall pursue for two years prescribed courses of study under the direction of the Faculty.

The conditions will be made known on application.

The degree of Civil Engineer is a professional one, and

is, on application, conferred upon graduates of the College who have taken the degree of Bachelor of Science, and subsequently have passed three years in the practice and study of engineering, with results satisfactory to the Faculty.

The applicant is required to furnish a statement of the work upon which he has been engaged, and to present a thesis or discussion of some engineering work which he has done. The application and thesis must be presented to the Secretary of the Faculty at least one month before Commencement.

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## REGULATIONS.

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Morning prayers are attended in the College Chapel each morning, except Saturday and Sunday, at 8:40 o'clock.

The recitation hours extend from 9 o'clock A. M. to 12 M., or 1 o'clock P. M., during five days of the week.

A Bible-Class is held Sunday morning in the College Chapel at 9:30 o'clock. All students are required to attend it.

A sermon is preached every Sunday morning in the College Chapel at 10:30 o'clock. Students are required to be present.

They are expected, also, to attend public worship in the afternoon or evening, at such place as their parents or guardians may direct.

No student is allowed to leave the city during term time without permission from the Registrar.

Excuses for absence from all College duties must be obtained from the Registrar.

Unexcused absences are reported to the Faculty; and a student is not allowed to make up the recitations omitted, but receives zero as a mark.

Recitations (except in cases of "Electives") are marked on a scale of 100, and the average standing of each student is made up at the end of each term, and sent to his parent or guardian. A mark at examination counts as much as one-third of the term's work up to the time of examination.

If the grade of a student in any term falls below 60 per centum of the maximum in one of his studies, he is conditioned in that study, and must be re-examined therein.

If the average of any student in any study at any time falls below 60 per centum of the maximum grade, his case must be acted on as the Faculty shall deem necessary.

If any student's average grade in any term falls below 60 per centum of the maximum, he loses his standing in his class, and is required to fall back a year in the course. If his work is not satisfactory after a month's trial here, he is dismissed from College.

Marks given in ELECTIVE work do not enter into the computation of grade; and the only official report of work done in Electives is the announcement, at the end of each term, in each student's report, that he has "failed" or "passed," or "passed with honor," in each of his elective courses.

If any student is found to be notably deficient in his daily recitations, or at the examination in any of his studies, his case is reported to the Faculty, and such action by way of discipline is taken as may be deemed necessary.

No student can be promoted to an advanced class until all his deficiencies are made up; and if he fails to make up all his deficiencies *before the opening of the College year*, he ceases to be a member of his class. Examinations for making up such deficiencies are held *on the Tuesday before the opening of the Autumn Session in September, at 10 A. M.*

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## COLLEGE EXPENSES.

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### FEEES.

Tuition, per annum, . . . . .	\$75 00
Incidentals—Janitor, Fuel, Reading-Room, per annum, . . . . .	10 00
Admission Fee, . . . . .	5 00
Graduation Fee, . . . . .	7 50
Analytical Chemistry, extra, per term, . . . . .	15 00
Electricity, extra, per term, Junior and Senior years, . . . . .	10 00

Of the above expenses, the admission fees are payable, on entrance, to the College Treasurer; the incidental expenses are payable at the beginning of the first term, in September; of the tuition fees, one-third, viz., \$25, is payable within ten days after the beginning of each term. All checks should be made payable to the Treasurer of Rutgers College.

Students in the Engineering Course are required to pro-

cure sets of draughting instruments, costing from \$10 to \$20. They are advised to defer the purchase of these instruments until entering College, as they will then have the advantage of procuring them under the direction of the Professor of Draughting.

Students in Analytical Chemistry are charged \$15 additional per term, for chemicals and use of Laboratory, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with the necessary sets of apparatus, which may be obtained from the regular apparatus dealers, or from the Laboratory Supplies department. These sets are retained through the year, but at the end of it, if the owners do not wish to keep them, they will be purchased at a fair price. If proper care has been exercised, a small discount only (about 10 per cent.) from the original cost will be made. All breakage will be charged in full.

Students in Electricity are charged \$10 extra, per term, throughout the Junior and Senior years, for the use of Laboratory and apparatus, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with the necessary apparatus, which, however, should not be obtained before arrival. All damage to College apparatus will be charged in full.

Students in Biology are charged \$5 extra, per term, for the use of instruments and Laboratory, which amount must be paid within ten days after the beginning of the term.

Students in the Classical Course, electing Physics, are charged \$5 extra, per term, for the use of Laboratory and apparatus, which amount must be paid within ten days after the beginning of the term.

### BOARD.

Board, with furnished room, can be obtained in New Brunswick at the present time for \$4 to \$7 per week; board without rooms for \$3 to \$5 per week. Students having the ministry in view may obtain rooms in Hertzog Hall, in the Theological Seminary, free of charge. These rooms are heated and lighted.

The Faculty are empowered to pass such regulations relative to the number of boarders in each house as they think proper; and students shall board only at such places as are approved by them.

By combining in clubs, students are able to reduce somewhat their expense for board.

*Free scholarships and pecuniary assistance* may be given to young men of approved character and ability, whose family circumstances are such as to make this assistance necessary. No deserving student who has shown perseverance and capacity is allowed to give up his course for lack of assistance.

### DORMITORY—WINANTS HALL.

The late GARRETT E. WINANTS, Esq., of Bergen Point, N. J., a Trustee of the College, gave to the College a handsome and spacious Dormitory, which is located on the west side of the Campus, fronting the east. The

colonial style of architecture was adopted, in harmony with the old College building, Queen's, and combining with the dignity of an academic structure the hospitality and homelikeness suggested by the American mansions of the latter part of the last and the beginning of the present century.

**DIMENSIONS.**—The building is 145 feet long by 65 feet wide, the center portion being 40 x 72 feet. It is four stories high, with basement and ample cellar.

**MATERIALS.**—The basement and first story are of Newark or Belleville brown-stone, with rock-faced, regular-coursed ashlar—the columns of the recessed porches, the cornices and other trimmings, are of cut stone. Above the first story the walls are of red Trenton pressed brick; the pilasters and main cornice and facings of dormer windows are of buff Roman brick, with terra-cotta enrichments. In the pediment of the center building the coat of arms of the Reformed Church and the legend of the College,—“*Sol justitiae et occidentem illustra*,” 1766,—are modeled in terra cotta, and over the main entrance the name of the building is carved in stone. The steep roofs are of slate, the deck being surrounded by a balustrade. The floors are double and deafened; all the corridors and halls are of maple; the dining, reception and students' rooms, of yellow pine. The doors and trimmings are of white and yellow pine, finished in natural colors, without paint. The stairways are of oak. The walls are of plaster, of yellow-toned color. Handsome mantels and wainscoting of yellow pine are in the main hall and assembly and dining-rooms. A clock has been placed at the top of the building.

**ARRANGEMENTS OF THE HALL.**—The main entrance is a broad Loggia or recessed porch, and there are also entrances at both ends of the building. On the first floor is a spacious hall, with a broad stairway as a central feature, and fire-places of Roman brick at either end, the intervening spaces being furnished for reception of visitors. The dining-room, 37 x 36 feet, is in the rear of the hall, and connected with it is a large assembly-room, 47 x 26.3 feet. These two rooms can be used together for Alumni dinners and other social and public occasions; ample serving-rooms, pantries, etc., adjoin the dining-room.

**STUDENTS' ROOMS.**—The building accommodates 120 students. The rooms are arranged in suites of a study and two single sleeping-rooms, for two room-mates, and there are a few single rooms. Special attention is given to light, ventilation and sanitary appliances, and to the necessary quiet retirement and privacy of the students. These rooms occupy portions of the first and fourth, and the whole of the second and third stories.

The kitchen, and laundry, stewards' and servants' apartments are in the fourth story, thus securing the proper isolation and management of the employes, and freedom from the odors and other inconveniences of basement kitchens. Dumb-waiters and private stairways extend from the cellar to the fourth story. Ample provision is made for fire-escapes and other securities against accidents.

The entire building is heated by steam, which can be made available for other purposes if deemed desirable. Bath-rooms, lavatories, linen closets and store-rooms are on each floor.



The large study-rooms are each furnished with two study tables and two chairs. The bed-rooms are each furnished with a solid oak set, consisting of bedstead (springs and mattress), bureau, washstand and two chairs. The remaining furniture, such as sheets, pillows, pillow-cases, coverlids, towels, bowl and pitcher, etc., are to be supplied by the occupant. The schedule of prices for single rooms and suites of rooms, heat and gas light included, will be furnished upon application.

In drawing for choice of rooms, the order of classes will be followed, precedence being given to the Seniors. Any person drawing a suite of rooms may choose his associates from any of the classes. Rooms are to be taken for the full year, unless specially released by the Dormitory Committee. Rent is payable in advance, one-third at the beginning of each term. Agreement to pay rent is for the entire suite, and must be signed by the student who draws it, or his guardian. Rooms may be occupied from the Monday preceding the opening of the College year to the Saturday following Commencement.

**BOARD.**—A matron who has had long experience and is known for her competency, has been engaged to assume the management of the building so far as the care of the rooms and the furnishing of board are concerned. The charge for board for the present year to the students is \$3.50 per week, and to their relatives and friends who may be transiently stopping with them, \$1.50 per day.

## BENEFICIARY AID.

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1. **Van Benschoten Fund.**

This fund, the gift of the Rev. ELIAS VAN BENSCHOTEN, in 1814, amounting to \$20,813, was given in trust jointly to the General Synod of the Reformed Church and the Trustees of Rutgers College, to aid in the education of indigent students for the ministry. The students who enjoy the benefits of this fund are appointed by the Trustees of the College on the nomination of the General Synod of the Reformed Church, and receive \$150 annually.

2. **Knox Fund.**

This fund, consisting of \$2,000, was given by Mrs. REBECCA KNOX, of Philadelphia, in 1815, to the Trustees of Rutgers College, the income from it to be expended for the support of one student in the Theological Seminary.

3. **W. H. Smock Fund.**

WILLIAM H. SMOCK, of Marlboro, N. J., left by his will, to the Trustees of Rutgers College, the sum of \$500, to be invested as a fund, the interest of which should be used to aid in the education of young men for the ministry. This legacy was received in 1859, and has been since that time duly employed for the purpose named.

4. **Mandeville Fund.**

In 1865, the Trustees of Rutgers College received from the executor of the will of WILLIAM MANDEVILLE, of New

York City, the sum of \$2,000; said sum to be invested, and the income thereof to be applied to the support of a theological student in the College.

#### 5. Voorhees Fund.

ABRAHAM VORHEES, of Franklin Park, N. J., bequeathed by his will \$26,000 to the Trustees of Rutgers College, the income of which is to be expended in aiding worthy young men who are candidates for the ministry, while pursuing their studies in Rutgers College. A grant of \$200 per annum is made to the students thus receiving aid.

#### 6. Free State Scholarships.

The law of the State of New Jersey granting to the Scientific Department of Rutgers College the Agricultural College Endowment, provides for the education of forty State students free of expense for tuition. These scholarships are distributed among the counties in proportion to their population, and the appointments to fill vacancies are made by the County Superintendents. The appointment gives the right to a course of instruction of four years in Rutgers Scientific School, on successfully passing the entrance examinations. The Trustees of the College, in 1888, voted ten additional scholarships "at large" for students from New Jersey in the Scientific School. By a law of the State passed March 31st, 1890, a free scholarship for each Assembly District each year is established. See pages 59, 60.

#### 7. Board of Education.

The Board of Education of the Reformed Church grants aid to young men preparing for the ministry in the denom-

ination. The conditions are that the persons receiving aid shall have been members of some Evangelical Church one year, and at the time members of some Reformed Church. The aid may be obtained either while in College or in the Theological Seminary.

At present the amount given is \$150 per annum. Information may be had by addressing the Secretary of the Board, 26 Reade street, New York.

#### **8. Rooms for Students.**

Such rooms in Peter Hertzog Hall as may not be required for the use of the students of the Theological Seminary, are allowed to be occupied by the students of the College who have the ministry in view, and on the same conditions as the members of the Theological Seminary, *i. e.*, free of charge.

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## PRIZES AND HONORS.

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In every case where it is expected that a prize will be awarded for work done, it is distinctly announced that unless in the opinion of the examiners the work submitted is of such excellence as to merit a prize or prizes, no prize will be awarded.

All prizes and honors are open equally to members of the Classical and Scientific Departments, except in cases where prizes are specifically limited to one department by the donor. Each competitor for a prize must sign a

written declaration that the essay or other work offered by him is his original and unaided work. The essays are to be written on a paper of a prescribed kind, and the successful essay is to be deposited in the College Library, before the writer is entitled to the prize. They are as follows:

**1. Suydam Prize for Composition.**

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of thirty dollars, or that sum in money, and is to be given to the member of the Senior Class who shall write the best English Composition on the subject assigned to the class by the Professor of Rhetoric. Competitors must hand in their compositions on or before April 18th. Subject for 1891: "The Scottish School of Philosophy; its Founders, Characteristics and Influence."

**2. Suydam Prize in Natural Science.**

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of thirty dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall have made the greatest attainments in Natural Science. The examination is upon all the subjects of Natural Science in the College course, and is conducted by the Professors in those subjects. The questions and answers are required to be written.

**3. Brodhead Classical Prize.**

This prize is the gift of Rev. Dr. JACOB BRODHEAD and his son, J. ROMEYN BRODHEAD, LL.D. It is the interest on \$500, *i. e.*, thirty dollars, to be given to the best Senior Classical scholar on the following conditions:

First. "That those who offer themselves as candidates

for it shall be subjected to a special examination, at a time to be fixed by the Faculty near the close of the Senior year."

Second. "That the subject of the examination be a passage or play of some Classical author (not included in the College programme of studies), to be selected by the Classical Professors, and to be announced at least one month before the time fixed for the examination."

Third. "A subject for an essay shall be announced at the same time, and the essay shall be given in on the day of examination."

Fourth. "Both the examination and the essay shall be taken into account in the adjudication of the prize. A law copy of the essay of the prize-man shall be handed in by him before the medal is put into his hands, to be preserved among the archives of the College."

Subject for examination for 1891—Books II. and III. of Cicero on the Laws, and the *XII. Tab.* Theme for essay, to be written *in Latin*: "Certain Questions Respecting the Twelve Tables of the Roman Law."

The Professor of Latin offers a special prize, to consist of a treatise on Roman Law, for the best *English* thesis on the same subject. This special prize is open to the Senior and Junior Classes.

#### 4. Bradley Mathematical Prize.

This prize is given by Hon. JOSEPH P. BRADLEY, LL.D., and consists of a valuable Mathematical work, which is to be bestowed on the student of the Senior Class who shall present the best solution of a set of Mathematical problems to be proposed to the class by the Professor of Mathematics before the close of the second term.

**5. Myron W. Smith Prizes.**

These prizes were founded by LYNDON A. SMITH, M.D., of Newark, in the name of his son, Adjutant MYRON W. SMITH, who was a graduate of the College, and who gave his life in the late war to the cause of his country. They consist of the interest of \$500, proportionately appropriated to two medals, one of gold and the other of silver, which are to be awarded respectively to the best and second-best speakers of the Sophomore Class. Only those students who shall have pursued, in the College, the regular studies of the classical or a full scientific course from the beginning of the Freshman year, shall be allowed to contend for these prizes.

The competition for these medals shall take place before a committee of the Faculty, when the best and second-best speakers shall be selected, to whom the medals shall be awarded, and six others shall receive honorable mention in their order of excellence. The medals shall be presented at Commencement.

**6. Tunis Quick Prize in Spelling and English Grammar.**

This prize, the gift of the late P. VANDERBILT SPADER, Esq., of New Brunswick, is the income of \$300, at 6 per centum, and is to be presented to that member of the Freshman Class, Classical or Scientific, who shall pass the best examination in Spelling and English Grammar.

The examination is to be conducted in writing by the Professor of English Literature, at as early a day as convenient in the second College term, and under such regulations as the Faculty may from time to time establish.

The prize may be withheld from any and all papers

offered, either for want of merit or for failure of proper competition. In case the prize be not awarded in any year, it is to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prize are subject to change by the Board of Trustees.

#### **7. Peter Spader Prizes in Modern History.**

These prizes, the gift of the late P. VANDERBILT SPADER, Esq., are two in number, the income of \$400 and \$300, respectively, at 5 per centum, and are to be awarded to those members of the Sophomore Class, Classical or Scientific, who shall present the best essays on some subject in Modern History, selected by the Professor of History, with the approval of the Faculty.

The subject is to be announced at the close of the Freshman year, and the competing essays are to be handed in on or before the last Monday in May of the Sophomore year.

The committee annually appointed by the Faculty may decline to award these prizes, or either of them, for want of merit in the essays, or for failure of proper competition. In case the prizes be not awarded in any year, they are to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prizes are subject to change by the Board of Trustees.

Subject for 1891: "The Relations of the United States and Great Britain on the North American Continent from 1783 to the Present Time."



**8. Appleton Memorial Prize in Moral Philosophy.**

This prize was founded by a gift of \$500, from the Rev. SAMUEL E. APPLETON, D.D., in the name of his mother, Mrs. ELIZABETH APPLETON. It consists of thirty dollars, the interest of the above sum, and will be given "to the member of the Senior Class who shall pass the best examination in Moral Philosophy."

**9. Bowser Engineering Thesis Prize.**

A prize consisting of a valuable Engineering work is given by Prof. E. A. BOWSER, LL.D., to that member of the Engineering Section of the Senior Scientific Class who shall present the best thesis upon some Engineering subject at graduation.

**10. John Parker Winner Memorial Prize in Mental Philosophy.**

This prize consists of twenty-five dollars, given by JOHN WINNER, Jr., and his wife, in memory of their deceased son, JOHN PARKER WINNER. It will be open to competition for students in both the Classical and Scientific Sections who are pursuing the Study of Mental Philosophy, and will be bestowed on the one who shall pass the best examination on some work assigned by the Professor of Metaphysics.

Work for 1891: Berkley's Principles of Knowledge, Dr. Krauth's Edition, pages 72-122, and 193-281.

**11. William H. Van Doren Prize for the Best Essay on Christian Missions.**

This prize consists of twenty dollars, the gift of the Rev. WILLIAM H. VAN DOREN, D.D. It is open to competi-

tion for members of the Senior and Junior Classes in both sections, and for members of the Theological Seminary.

**12. Junior Exhibition.**

Eight members of the Junior Class are chosen each year, in equal numbers from the Peithessophian and Philoclean Literary Societies, who deliver original speeches at an exhibition held on the Tuesday evening preceding Commencement. The selection is made by a committee of three persons, of whom one is chosen by each Society and a third by the Faculty, and is based upon relative excellence as writers and speakers.

A prize of twenty-five dollars, the gift of RALPH N. PERLEE, Esq., of New York City, is awarded by a special committee at the time of the exhibition to that orator who shall be adjudged the best writer and speaker among the contestants.

**13. Hart Prize in English Literature.**

A prize of twenty-five dollars is offered to the members of the Sophomore Class for the best essay upon a subject in Literature; the theme is assigned by the Professor of that Department, and the prize is awarded by a committee appointed by him.

Subject for 1891: "George Eliot as a Novelist."

**14. The Bussing Prizes for Extempore Speaking.**

Mrs. ANN BUSSING, of New York City, has given to the College \$1,000, the income of which (fifty dollars per annum) is to be expended each year for books, which shall be selected by the President of the College, and given as follows: The First Prize, of thirty dollars, to that member

of the Senior Class who shall prove himself to be the best extemporaneous speaker ; the Second Prize, twenty dollars, to the second-best extemporaneous speaker of the Senior Class. The prizes are to be awarded by the Faculty of the College, or by a committee whom they shall name, and shall be awarded after a public debate to be held in the latter part of the College year. In awarding the prizes, "strict attention shall be given to logical and forcible presentation of thought, full and accurate information as to matters of fact, and grace and effectiveness in delivery." For the sake of training students in the clear expression of intelligent thought upon matters of public interest, each class has an exercise in *extempore* speaking twice in each term. The subject is announced to the class, and, after five minutes for thought, the members of the class discuss the subject or debate the question before a committee.

**15. Van Vechten Prize—Essay on Christian Missions.**

A. V. W. VAN VECHTEN, Esq., of New York, has founded, in honor of his mother, the late LOUISA VAN VECHTEN, and his father, Rev. Dr. SAMUEL VAN VECHTEN, a prize of sixty dollars, by the gift of \$1,000, the prize "to be given annually to that student of Rutgers College who shall be adjudged by the Faculty of the Theological Seminary of the Reformed Church of America, at New Brunswick, to have presented an article, original with himself, and the best submitted—the most conclusive and inspiring to strengthen faith in and love for Foreign Missions." Essays to be presented on or before May 1st of each year.

**16. Liebig Prize for Best Chemical Thesis.**

A prize of twenty-five dollars, or equivalent value in books, will be given by Prof. P. T. AUSTEN, F.C.S., to that student of the Chemical Section of the Graduating Scientific Class whose thesis, embodying the results of his study and Laboratory work, shall be adjudged to be worthy of the prize.

**17. The Class of 1876 Prize Fund for the Encouragement of the Study of Political Philosophy.**

The Class of 1876 have given to the College five hundred dollars (\$500) as the foundation of a Prize Fund (which they express the hope that they may increase from time to time, until it shall be sufficiently large to establish a Fellowship), for the encouragement of the study of Political Philosophy. The income of this fund is to be awarded each year "to that member of the Senior Class (either Classical or Scientific) who shall be adjudged entitled to it, \* \* \* on the basis of an original essay on some subject in Political Philosophy, assigned by the Professor of that science in the College, and upon a competitive examination in a text-book also selected by him;" the committee of award to consist of "three competent persons selected by the Faculty of the College, at least one member of the committee to be a member of the Class of 1876 as long as any may be living."

Subject for 1891: "The Past and Present of the Self-organization of Labor in the United States."

**18. Upon Prize in American Literature.**

For the encouragement of study in American Literature, a prize of fifty dollars is offered by the Librarian, to be awarded by a committee appointed by him, to that member of the Junior or Senior Class who shall write the best essay upon a subject assigned by him, and upon the following conditions:

First. The essay, of not more than 5,000 words, must be presented in writing upon the standard thesis paper of the College, with the understanding that the original copy is to be preserved in the College Library.

Second. Each competitor must sign his essay with a fictitious name, according to the general rules of the College, and hand it to the Librarian on or before May 1st, 1891.

Third. The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition.

Subject for 1891: "The Genesis of the American Novel."

**19. Honorable Mention for Work outside the Course done  
Without Reference to a Prize.**

For the encouragement of independent reading and study and original investigation, under the direction of the Faculty, honorable mention is made of students who give evidence of thoroughness in such work, and pass a satisfactory examination.

## LIBRARY.

The Library of the College, containing 28,000 volumes, is open for consultation during each term as follows: On Mondays, Tuesdays, Wednesdays, Thursdays and Fridays, from 8 to 8:40 A. M., and from 12 M. to 12:50 P. M., and from 2 P. M. to 4:30 P. M.; on Saturdays from 9 A. M. to 12:50 P. M., and from 2 to 4:30 P. M. Students are allowed free access to the books, and are encouraged to become familiar with the proper methods of using a library for literary work.

In 1887, the late P. VANDERBILT SPADER, Esq., of New Brunswick (a member of the Class of 1849), gave to the College his personal library, valued at \$15,000, and consisting of about 5,000 books, among them many very valuable art volumes, and collections especially rich in State and local history, and in books of reference.

By the gift of a permanent fund of \$1,000 from JAMES SUYDAM, Esq., supplemented by gifts from other sources, the Library is supplied with the leading periodical publications in the various departments.

By the courtesy of the Theological Seminary of the Reformed Church, the SAGE LIBRARY of more than 40,000 volumes is opened to the students of Rutgers for consultation; and under certain limitations books are drawn from it as well. It is within three minutes' walk of the College campus.

## MUSEUM AND APPARATUS.

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The Trustees solicit contributions from the friends of the College to the collections of the Museum. It is their wish to increase greatly the present valuable collections by additions in all departments. Donations of specimens illustrating Geology, Mineralogy, Natural History, Numismatics and Antiquities, and the Industrial Arts, are earnestly requested. Ample rooms are provided in the new Geological Hall for the proper preservation and display of such specimens. By the kindness of numerous friends, suitable cases have been provided to receive the collections which the College already possesses, and they are now being arranged as rapidly as circumstances will allow.

The apparatus of the College for illustrating the various branches of science is extensive and serviceable. It has been obtained as the wants of the classes demanded, and comprises many recent additions to the Chemical and Philosophical apparatus. The students in Analytical Chemistry are provided with the requisite facilities for making analyses. The arrangements for these departments in the buildings recently erected are of the most ample and convenient description.

**The Thomas L. Janeway, M.D., Memorial Collection** to illustrate Classical Archæology, is the gift of the heirs of Dr. THOMAS L. JANEWAY, of the Class of 1863.

It already includes (1) eight casts from marbles typical

of the chief periods in the history of sculpture. These casts were manufactured by Brucciani & Co., of London. (2) Five hundred casts from engraved gems (cameos and intaglios) and coins, Greek and Roman. These were selected with an eye both to the study of the development of the art and to the especially full illustration of its best achievements. The workmanship on these casts is that of Augustus Ready, of the British Museum. (3) Eight hundred stereopticon slides, of which all but eighty-two were made by the well-known Levy, of Paris. (4) One thousand photographs and restorations. Among the photographers are Bonfils, of Beirut; Sommer, of Naples; Anderson, of Rome; Mansell, of London; Lombardi, of London; Quaas, of Berlin; Hauteœur, of Paris, etc., etc.

The collection, made in Europe by a member of the College faculty, is designed to illustrate the topography, art, life and literature of Ancient Greece and Rome, and for this purpose is used constantly by College classes.

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## CATALOGUES.

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Former students of the College, whether graduates or not, are earnestly requested to keep the College informed of any change in their address or occupation, of works published, offices held, etc., both to facilitate the sending of the annual catalogue, and to furnish material for general catalogues, when printed. Catalogues of the College, etc., will be sent to alumni or friends of the College who send to the Registrar their addresses, for this purpose.



## REGISTER.

## 1. SOPHOMORE ORATORS, CLASS OF 1892.

PHILIP MILLEDOLER BRETT,	Jersey City, N. J.
WALTER TRACY SCUDDER,	Tindivanam, India.

The following are named in the order of their appointment  
according to merit:

ROBERT E. FARLEY,	Fort Plain, N. Y.
JAMES D. CARR,	New York City.
FRANK R. VAN HORN,	Johnsonsburg, N. J.
P. CONOVER FIELD,	New Brunswick, N. J.
AMOS H. HAINES,	Sergeantsville, N. J.
JAMES W. THOMPSON,	New Brunswick, N. J.
ROBERT S. WINN,	Madison, Wis.

## 2. JUNIOR ORATORS, CLASS OF 1891.

JUNIOR EXHIBITION, JUNE 17, 1890.

PEITHESOPHIAN SOCIETY.	PHILOCLEAN SOCIETY.
PAULL J. CHALLEN.	JOSEPH C. CASTNER.
S. CLIFFTON MABON.	EDWARD O. CHICKERING.
JAMES C. STOUT.	JOHN H. RAVEN.
CLIFFORD H. STRANG.	HOWARD A. REYNOLDS.

## 3. GRADUATING EXERCISES, CLASS OF 1889.

COMMENCEMENT, JUNE 18, 1890

## HONORS.

ALEXANDER VAN WAGONER,	Paterson, N. J.
Valedictory, First Honor.	
WARREN REDCLIFFE SCHENCK,	New Brunswick, N. J.
Latin Salutatory, Second Honor.	
RALPH SPENCER VOORHEES,	Bedminster, N. J.
Philosophical Oration, Third Honor.	
WARREN ACKERMAN MAYOU,	Appleton City, Mo.
Scientific Oration, Fourth Honor.	
WARREN REDCLIFFE SCHENCK,	New Brunswick, N. J.
Rhetorical Honor.	

## ORATIONS.

ELIAS BROWN VAN ARSDALE, . . . . .	Paterson, N. J.
HENRY JOHNSTON SCUDDER, . . . . .	Poughkeepsie, N. Y.
JOHN S. VAN ORDEN, . . . . .	Spring Valley, N. Y.
ARTHUR FREDERICK MARON, . . . . .	New Brunswick, N. J.

## MASTER'S ORATION.

THURSTON WALKER CHALLEN, . . . . .	New Brunswick, N. J.
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## 4. DEGREES CONFERRED.

## Degree of Bachelor of Arts Conferred on Candidates in Course.

HOWARD WILBER ENNIS.	WARREN REDCLIFFE SCHENCK.
GARRET JACOB FOLMSBEE.	HENRY JOHNSTON SCUDDER.
GEORGE WASHINGTON GLASIER.	ARTHUR SPAULDING.
GERARD HALLOCK.	ELIAS BROWN VAN ARSDALE.
HORACE STERLING HAWES.	JOHN S. VAN ORDEN.
IRVING HOAGLAND.	ALEXANDER VAN WAGONER.
ARTHUR FREDERICK MARON.	CHARLES WILLIAM VAN ZEE.
WARREN ACKERMAN MAYOU.	RALPH SPENCER VOORHEES.
STEPHEN WARD RIGETER.	WILLIAM DAVIS WARD.

## Degree of Bachelor of Science Conferred on Candidates in Course.

CHARLES DIVINE.	MALCOLM CAMERON LUDLAM.
ALLEN PRICE FORD.	EDWARD THORN MIDDLETON.
HOWARD GOFF.	JOHN ALFRED POTTER.
SAMUEL HOBART LOCKETT.	LOUIS WILLIAM STOTESBURY.

## Degree of Master of Arts Conferred.

PALMER COOK COLE, '55.	WILLIAM PIERSON MERRILL, '87.
CHARLES STUART AITKIN, '80	FRANKLIN AMBLER PATTISON, '87.
FREDERICK WILKINSON OLCOTT, '80.	FRANK J. SAGENDORPH, '87.
HOWARD MELVILLE LANSING, '82.	ALBERT BENJAMIN HERMAN, '87.

## Degree of Master of Science Conferred.

FREDERICK WILLIAM MALCOLM, '81.	HARRY JOSEPH MARCH, '87.
THURSTON WALKER CHALLEN, '87.	ISAAC LEWIS WINCKLER, '87.

## Degree of Civil Engineer Conferred.

HARRY JOSEPH MARCH, '87.

## RUTGERS COLLEGE.

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### Honorary Degrees Conferred.

PH.D. JAMES C. BAYLES, M.E., . . . . .	East Orange, N. J.
L.H.D. REV. CORNELIUS V. A. VAN DYCK, D.D., . . . . .	Beyrout, Syria.
LL.D. GEORGE JUNKIN, ESQ., . . . . .	Philadelphia, Pa.
D.D. REV. FERDINAND S. SCHENCK, . . . . .	Hudson, N. Y.
D.D. REV. JOHN H. SALISBURY, '75, . . . . .	Trenton, N. J.

### 5. CERTIFICATES FOR SPECIAL WORK.

WILLIAM CHARLES HUBBARD, . . . . .	Plainfield, N. J.
JOHN ELLIS IRICK, . . . . .	Vincentown, N. J.
WARREN MCCLELLAN OSBORN, . . . . .	Point Pleasant, N. J.
ISAAC SPERLING, . . . . .	Middlebush, N. J.

### 6. PRIZES AWARDED.

#### COMMENCEMENT, 1890.

#### GENERAL PRIZES.

Van Vechten Prize for Essay on Foreign Missions,	W. R. SCHENCK.
Van Doren Prize for Essay on Christian Missions,	W. R. SCHENCK.

#### SENIOR PRIZES.

Soydam Prize for Composition, . . . . .	W. R. SCHENCK.
Soydam Prize for Natural Science, . . . . .	E. T. MIDDLETON.
Brodhead Classical Prize, . . . . .	S. W. RIGHTER.
Bradley Mathematical Prize, . . . . .	HOWARD GOFF.
Appleton Prize for Moral Philosophy, . . . . .	W. R. SCHENCK.
Bowser Prize for Best Engineering Thesis, . . . . .	S. H. LOCKETT.
Liebig Prize for Best Chemical Thesis, . . . . .	{ CHARLES DIVINE. A. P. FORD.
Bussing Prize for Extemporaneous Debate, 1st,	A. VAN WAGONER.
Bussing Prize for Extemporaneous Debate, 2d, . . . . .	W. R. SCHENCK.
Class of '76 Political Philosophy Prize, . . . . .	W. R. SCHENCK.

#### JUNIOR AND SENIOR PRIZE.

Upon American Literature Prize, . . . . .	W. R. SCHENCK, '90.
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#### JUNIOR PRIZES.

John Parker Winner Memorial Prize for Mental Philosophy, . . . . .	{ W. F. METS.
Perlee Junior Orator Prize, . . . . .	J. C. CASTNER.

## SOPHOMORE PRIZES.

Myron W. Smith Prize for Declamation, 1st, . . .	P. M. BRETT.
Myron W. Smith Prize for Declamation, 2d, . . .	W. T. SCUDDER.
Hart English Literature Prize, . . . . .	J. W. THOMPSON.
Spader Prize for Modern History, 1st, . . . .	H. K. DAVIS.
Spader Prize for Modern History, 2d, . . . .	J. F. BERG.

## FRESHMAN PRIZES.

Tunis Quick Grammar and Spelling Prize, . . .	F. R. CUSHMAN.
Sloan Entrance Examination Prize, 1st, . . .	F. R. CUSHMAN.
Prepared by private instructors.	
Sloan Entrance Examination Prize, 2d, . . . .	H. E. STUDLEY.
Prepared at Rutgers College Grammar School.	

## OCTOBER, 1890.

Sloan Entrance Examination Prize, 1st, . . .	H. V. M. DENNIS, JR.
Prepared at Freehold, N. J., Institute.	
Sloan Entrance Examination Prize, 2d, . . . .	F. C. VAN DYCK, JR.
Prepared at Rutgers College Preparatory School.	

## HONORABLE MENTION FOR WORK OUTSIDE THE COURSE.

In French. . . . .	{ R. B. ALLEN, '93, S.
	{ J. W. HIGGINS, '93, S.

## 7. CLASS-DAY EXERCISES.

## CHAPEL.

<i>President</i> , . . . . .	A. F. MABON, New Brunswick, N. J.
<i>Orator</i> , . . . . .	A. VAN WAGONER, Paterson, N. J.
<i>Poet</i> , . . . . .	W. A. MAYOU, Appleton City, Mo.
<i>Historian</i> , . . . . .	H. J. SCUDDER, Poughkeepsie, N. Y.
<i>Presenter of Class Memorial</i> , . . . . .	S. W. RIGHTER, Boonton, N. J.
<i>Prophet</i> , . . . . .	A. SPAULDING, Newark, N. J.
<i>Address to Lower Classmen</i> , . . . . .	J. A. POTTER, Rahway, N. J.
<i>Presenter of Mementoes</i> , . . . . .	H. S. HAWES, Richmond, Va.

## CAMPUS.

<i>Ivy Orator</i> , . . . . .	I. SPERLING, Middlebush, N. J.
<i>Ivy Planter</i> , . . . . .	C. DIVINE, Elizabeth, N. J.
<i>Ivy Ode</i> , . . . . .	E. B. VAN ARSDALE, Paterson, N. J.
<i>Pipe Orator</i> , . . . . .	C. W. VAN ZEE, Bayonne, N. J.
<i>Address to President</i> , . . . . .	G. W. GLASIER, Warsaw, N. Y.
	W. C. HUBBARD, Plainfield, N. J.
	HOWARD ELTING, Gardiner, N. Y.
<i>Committee</i> , . . . . .	M. C. LUDLAM, South Dennis, N. J.
	E. T. MIDDLETON, Crosswicks, N. J.

8. RUTGERS CORPS CADETS.

COMMANDANT.

SAMUEL E. SMILEY,  
Second Lieutenant, Eighth U. S. Infantry.

STAFF.

J. C. AYDELOTT, *First Lieutenant and Adjutant.*  
P. BETTS, *Sergeant-Major.*

COMPANY A.

*Captain.* . . . S. A. JOHNSON.  
*First Lieutenant.* . G. A. MITCHELL.  
*Second Lieutenant.* A. B. TOTTEN.  
*First Sergeant.* . . P. C. FIELD.

*Sergeants.* . . . { W. H. STAFFORD.  
W. J. COOPER  
F. R. VAN HORN.  
G. H. WYCKOFF.

*Corporals.* . . . { G. W. MENDENHALL.  
R. B. ALLEN.  
F. W. REMSEN.  
B. F. WARD.  
H. V. D. WALDRON.

COMPANY B.

*Captain.* . . . I. M. SUTTON.  
*First Lieutenant.* . P. J. CHALLEN.  
*Second Lieutenant.* M. C. SEARS.  
*First Sergeant.* . . H. E. BRUERE.

*Sergeants.* . . . { M. F. H. DE HAAS.  
J. L. R. MORGAN.  
E. BETTS.

*Corporals.* . . . { C. H. E. UTTER.  
E. F. SCATTERGOOD.  
H. F. TWITCHELL.  
C. S. CHAMBERLAIN.

COMPANY C.

*Captain.* . . . J. C. CASTNER.  
*First Lieutenant.* . F. S. SMITH.  
*Second Lieutenant.* H. W. FULLER.  
*First Sergeant.* . . A. H. BERRY.

*Sergeants.* . . . { G. C. BULLOCK.  
G. S. VOORHEES.  
H. L. HOYT.  
H. M. DECKER.  
C. E. LOVEJOY.  
D. H. McLAURY.  
J. W. HIGGINS.

COLOR GUARD.

*Color Sergeant.* . W. J. COOPER.  
*Color Corporals.* { G. W. MENDENHALL.  
C. H. E. UTTER.  
H. M. DECKER.  
B. F. WARD.

DISTINGUISHED STUDENTS IN MILITARY DEPARTMENT.

In accordance with recent orders of the War Department, on the graduation of every class, the names of such

students as have shown special aptitude for military service will be reported to the Adjutant-General of the Army, and to the Adjutant-General of New Jersey; and the names of the three most distinguished students in Military Science and Tactics will be inserted on the U. S. Army Register and published in general orders.

The names of students in the Class of 1889 published in the U. S. Army Register for 1890, were :

JOHN P. STREET, First Lieutenant, Company B.  
JOSEPH S. STILLWELL, First Lieutenant and Adjutant.  
ALBERT C. AREND, First Lieutenant, Company A.

The names of students in the Class of 1890 which will be published in the U. S. Army Register for 1891, are :

SAMUEL H. LOCKETT, JR., Captain, Company B.  
ALLEN P. FORD, First Lieutenant, Company A.  
HOWARD GOFF, First Lieutenant and Adjutant.

#### 9. ALUMNI ASSOCIATION.

##### OFFICERS FOR THE YEAR 1890-1891.

<i>President,</i> . . . . .	J. ROMEYN HOAGLAND, '52.
	FOSTER M. VOORHEES, '76.
<i>Vice-Presidents,</i> . . . . .	JOHN N. CARPENDER, '56.
	REV. PHILETUS T. POCKMAN, '75.
	REV. ALAN CAMPBELL, '62.
<i>Secretary,</i> . . . . .	THEODORE STRONG, '83.
<i>Treasurer,</i> . . . . .	T. B. BOORAEEN, '81.
<i>Necrologist,</i> . . . . .	I. S. UPSON, '81.
	H. A. NEILSON, '78.
<i>Inspectors of Election of Alumni Trustees,</i> . . . . .	A. H. STRONG, '74.
	A. V. N. BALDWIN, '79.
<i>Orator Primarius,</i> . . . . .	REV. GRAHAM TAYLOR, '70.
<i>Orator Secundus,</i> . . . . .	GEORGE L. DANFORTH, '63.

# RUTGERS COLLEGE PREPARATORY SCHOOL.

FOUNDED 1766.

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E. H. COOK, A.M., Ph.D., HEAD-MASTER.

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While the careful preparation for Colleges and Scientific Schools will be the chief aim of this School, attention will also be paid to students desiring to prepare for business.

The Head-Master has spent many years in the special study of *physical habits and culture* as applied to the student life, and will give personal attention to all matters pertaining to the health and proper physical development of the boys placed under his care.

The number of pupils at the "Home" is limited to *forty*, and each boy will receive individual attention and care.

## LOCATION.

The location of a thorough preparatory school in a city like New Brunswick is most fortunate. On the Pennsylvania Railroad, it is easy of access, being only about one hour's ride from New York, and one and one-half hour's from Philadelphia. Trains are passing at all hours of the day. The influences of a college town are excellent for intellectual work. Often parents send their sons to be trained in such a town, to cultivate and stimulate a desire for a more advanced course of study.

New Brunswick is a most healthful location.

## ADMISSION.

Pupils will be received at any time. It is earnestly urged, however, both for the individual and the class, that pupils enter promptly at the beginning of the year or quarter.

Each pupil will bring with him a certificate of good moral character from the last school he attended, or from the pastor of the church he has attended.

## INTERMEDIATE AND PRIMARY DEPARTMENTS.

The work in these departments is designed to prepare boys of the youngest school age for the more advanced work of the school. The number of pupils is limited. Special care is taken in regard to the morals and language of each boy.

The work of these departments will be continued by Miss ESTHER A. ANDREWS, who has to a marked degree won the love and esteem of those under her care. Parents can place their boys with Miss Andrews in perfect confidence that their work will be well directed.

For any further information, address E. H. Cook, Ph.D., Head-Master, Rutgers College Preparatory School, New Brunswick, N. J.





1897  
CATALOGUE  
OF  
RUTGERS COLLEGE  
AT  
NEW BRUNSWICK, N. J.



1891-'92.



CATALOGUE  
OF THE  
OFFICERS AND STUDENTS  
OF  
RUTGERS COLLEGE  
AT  
NEW BRUNSWICK, N. J.

1891-92.

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CHARTERED AS QUEEN'S COLLEGE, A. D. 1766.

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PRINTED FOR THE COLLEGE.  
1891.

## CALENDAR.

## 1891.

SEPTEMBER 22, Tuesday: Examinations for admission.  
 SEPTEMBER 23, Wednesday: First Term begins. Recitations.  
 OCTOBER 3, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 27, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOVEMBER 25-30, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving  
 Recess.  
 DECEMBER 16-22, Wednesday-Tuesday: Examinations. First Term ends.  
 DEC. 22-JAN. 6, Tuesday-Wednesday, 8:40 A. M.: Christmas Vacation.

## 1892.

JANUARY 6, Wednesday: Second Term begins. Recitations.  
 JANUARY 23, Day of Prayer for Colleges.  
 FEBRUARY 22, Monday: Washington's Birthday.  
 MARCH 1, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 MAR. 30-APR. 5, Wednesday-Tuesday: Examinations. Second Term ends.  
 APRIL 5-13, Tuesday-Wednesday, 8:40 A. M.: Spring Vacation.  
 APRIL 13, Wednesday: Third Term begins. Recitations.  
 MAY 23, 24, Monday and Tuesday: Senior Final Examinations.  
 JUNE 13-17, Monday-Friday: Examinations of Three Lower Classes.  
 JUNE 17, Friday: Reading of Theses by Scientific Seniors, 2 P. M.  
 JUNE 19, Sunday: Baccalaureate Sermon, 7:30 P. M.  
 JUNE 20, 21, Monday, 10 A. M., and Tuesday: Examinations for admission.  
 JUNE 20, Monday: Class-Day Exercises, 3 P. M.  
 JUNE 21, Tuesday:  
     Commencement Meeting of the Board of Trustees, 10 A. M.  
     Meeting of the Alumni, 10 A. M.  
     Exercises of the Literary Societies, 3:30 P. M.  
     Junior Exhibition, 8 P. M.  
 JUNE 22, Wednesday: 126th Annual Commencement, 10 A. M.  
 JUNE 22-SEPT. 20, Wednesday-Tuesday: Long Vacation.  
 SEPTEMBER 20, Tuesday:  
     Examinations for admission, 10 A. M.  
     Examinations for removal of June Conditions, 10 A. M.  
 SEPTEMBER 21, Wednesday: First Term begins. Recitations.  
 OCTOBER 1, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 25, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOVEMBER 23-28, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving  
 Recess.  
 DECEMBER 14-20, Wednesday-Tuesday: Examinations. First Term ends.  
 DEC. 20-JAN. 4, Tuesday-Wednesday, 8:40 A. M.: Christmas Vacation.

## 1893.

JANUARY 4, Wednesday: Second Term begins. Recitations.

## TRUSTEES.

1891-92.

## EX-OFFICIO.

HIS EXCELLENCY LEON ABBETT,	JERSEY CITY.
<i>Governor of the State of New Jersey.</i>	
HON. MERCER BEASLEY, LL.D.,	TRENTON.
<i>Chief Justice of the State of New Jersey.</i>	
HON. JOHN P. STOCKTON, LL.D.,	TRENTON.
<i>Attorney-General of the State of New Jersey.</i>	

## BY ELECTION.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
AUSTIN SCOTT, PH.D., LL.D., <i>President of the College.</i>	New Brunswick,	Nov. 25, 1890.
REV. T. E. VERMILYE, D.D., LL.D.,	New York City, 15 West 56th St.	July 24, 1849.
HON. JOHN HOPPER,	Paterson,	July 22, 1851.
MAURICE E. VIELE, ESQ.,	Albany, N. Y.,	July 27, 1853.
REV. DAVID D. DEMAREST, D.D.,	New Brunswick,	April 18, 1858.
HON. JOSEPH P. BRADLEY, LL.D.,	Washington, D. C.,	June 29,†1858.
HENRY L. JANeway, ESQ.,	New Brunswick,	April 8, 1862.
REV. TALBOT W. CHAMBERS, D.D., LL.D.,	New York City, 70 West 86th St.	June 17, 1868.
REV. JOACHIM ELMENDORF, D.D.,	New York City, 61 East 128d St.	April 14, 1869.
REV. PAUL D. VAN CLEEF, D.D.,	Jersey City,	April 14, 1869.
SAMUEL SLOAN, ESQ.,	New York City, 26 Exchange Place.	June 20, 1871.
HON. GEORGE C. LUDLOW,	New Brunswick,	June 17, 1873.
HON. WILLIAM A. NEWELL, M.D., LL.D.,	Olympia, Wash.,	June 17, 1873.
REV. ISAAC S. HARTLEY, D.D.,	Utica, N. Y.,	June 17, 1873.
REV. JOHN GASTON, D.D.,	Passaic,	June 20, 1876.
HON. HENRY W. BOOKSTAVEY, LL.D.,	New York City, 14 East 67th St.	June 20, 1876.

† Corrected from former catalogues.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
ROBERT F. BALLANTINE, Esq.,	Newark,	June 20, 1876.
†REV. WILLIAM RANKIN DUEYEE, D.D.,	Jersey City,	March 5, 1878.
*REV. WILLIAM J. R. TAYLOR, D.D.,	Colorado Springs, Col.,	June 18, 1878.
REV. ABRAHAM R. VAN NEST, D.D.,	New York City, 62 Wall St.	Oct. 29, 1878.
WILLIAM CLARK, Esq.,	Newark,	Oct. 29, 1878.
HON. GEORGE H. SHARPE,	Kingston, N. Y.,	March 4, 1879.
DAVID BINGHAM, Esq.,	East Orange,	March 7, 1882.
HENRY R. BALDWIN, M.D.,	New Brunswick,	June 17, 1884.
FREDERICK FRELINGHUYSEN, Esq.,	Newark,	June 16, 1885.
ERNEST J. MILLER, Esq.,	Albany, N. Y.,	June 16, 1885.
HON. JONATHAN DIXON, LL.D.,	Jersey City,	June 22, 1886.
JAMES NEILSON, Esq.,	New Brunswick,	June 22, 1886.
REV. RODERICK TERRY, D.D.,	New York City, 169 Madison Ave.	June 22, 1886.
TUNIS G. BERGEN, PH.D.,	Brooklyn, N. Y., 127 Pierpoint St.	Oct. 25, 1887.
REV. EDWARD B. COE, D.D.,	New York City, 42 West 52d St.	Oct. 25, 1887.
ELBERT B. MONROE, Esq.,	Southport, Conn.,	Oct. 25, 1887.
REV. JOHN B. DRURY, D.D.,	New Brunswick,	Oct. 25, 1887.
REV. JAMES LE FEVRE,	Middlebush,	June 19, 1888.
FREDERICK J. COLLIER, Esq.,	Hudson, N. Y.,	June 16, 1891.
ALEXANDER T. VAN NEST, Esq.,	New York City, 31 West 37th St.	June 16, 1891.
PAUL COOK, Esq.,	Troy, N. Y.,	June 16, 1891.

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REV. DAVID D. DEMAREST, D.D., . . . . . New Brunswick.  
*Secretary of the Board.*

FREDERICK FRELINGHUYSEN, Esq., . . . . . Newark.  
*Treasurer of the Board.*

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#### STATED MEETINGS OF THE BOARD.

Last Tuesday in October, at 2 o'clock P. M.

First Tuesday in March, at 2 o'clock P. M.

Tuesday before Commencement, at 10 o'clock A. M.

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† Resigned to accept the chair of Ethics, Evidences of Christianity and the English Bible.

\* Died November 12th, 1891.

FACULTY.

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AUSTIN SCOTT, PH.D., LL.D.,  
PRESIDENT,

*VOORHEES Professor of History and Political Science.*  
24 Livingston Avenue.

REV. THEODORE SANDFORD DOOLITTLE, D.D., LL.D.,  
VICE PRESIDENT,

*COLLEGIATE CHURCH Professor of Rhetoric, Logic and Mental Philosophy.*  
Seminary Place.

REV. JACOB COOPER, D.D., D.C.L.,  
*Professor of the Greek Language and Literature.*  
108 George Street.

REV. CARL MEYER, D.D.,  
*Professor of Modern Languages and Literatures.*  
245 Easton Avenue.

FRANCIS CUYLER VAN DYCK, PH.D.,  
*Professor of Physics and Experimental Mechanics.*  
84 College Avenue.

EDWARD ALBERT BOWSER, C.E., LL.D.,  
*Professor of Mathematics and Engineering.*  
Queen's College Building.

REV. CHARLES EDWARD HART, D.D.,  
*Professor of the English Language and Literature.*  
88 Livingston Avenue.

## RUTGERS COLLEGE.

\*FRANCIS AUGUSTUS WILBER, M.S.,  
*Professor of Analytical Chemistry.*

LOUIS BEVIER, JR., PH.D.,  
*Professor of Modern Languages.*  
Bishop Place.

EDGAR SOLOMON SHUMWAY, A.M.,  
*Professor of the Latin Language and Literature.*  
208 Redmond Street.

ALFRED ALEXANDER TITSWORTH, M.S., C.E.,  
*Professor of Graphics and Mathematics.*  
57 Livingston Avenue.

JULIUS NELSON, PH.D.,  
*Professor of Biology, and its application in Developing Food-Products.*  
Adelaide Avenue, Highland Park.

BYRON DAVID HALSTED, Sc.D.,  
*Professor of Botany and Horticulture.*  
64 College Avenue.

JOHN BERNHARD SMITH, Sc.D.,  
*Professor of Entomology.*  
81 Easton Avenue.

EDWARD BURNETT VOORHEES, A.M.,  
*Professor of Agriculture.*  
83 Easton Avenue.

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\*Died May 25th, 1891.



REV. WILLIAM RANKIN DURYEE, D.D.,  
THEODORE FRELINGHUYSEN *Professor of Ethics, Evidences of Christianity  
and the English Bible.*  
17 Union Street.

ALBERT HUNTINGTON CHESTER, E.M., PH.D., Sc.D.,  
*Professor of General and Applied Chemistry.*  
64 College Avenue.

JOHN JAMES BRERETON, 1ST LIEUTENANT, 24TH U. S. INFANTRY,  
*Professor of Military Science and Tactics.*  
381 George Street.

JOHN CHARLES VAN DYKE, L.H.D.,  
*Professor of the History of Art.*  
Sage Library.

IRVING STRONG UPSON, A.M.,  
*Librarian and Registrar.*  
118 Bayard Street.

ROBERT WOODWORTH PRENTISS, M.S.,  
*Associate Professor of Mathematics and Astronomy.*  
282 Hamilton Street.

EDWARD LUTHER STEVENSON, PH.D.,  
*Associate Professor of History.*  
60 College Avenue.

CLARENCE LIVINGSTON SPEYERS, PH.B.,  
*Assistant Professor of Chemistry.*  
361 George Street.

## RUTGERS COLLEGE.

EDWARD THORN MIDDLETON, B.S.,  
*Instructor in Electricity and Physics.*  
845 George Street.

EDWARD LIVINGSTON BARBOUR,  
*Instructor in Elocution.*  
125 Albany Street.

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GEORGE ANDREWS MITCHELL, B.S.,  
*Chemical Laboratory Assistant.*  
College Farm.

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The names of the Faculty, after that of the President, are arranged in groups. The Professors, according to seniority of appointment; the Librarian and Registrar; the Associate Professors and Instructors, in the order of their respective appointments.

## CATALOGUE OF STUDENTS

FOR THE YEAR BEGINNING SEPTEMBER 23, 1891.

## GRADUATE STUDENTS.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
SPENCER AMBROSE BEACH, B.S.A., Iowa Agricultural College. <i>Botany.</i>	Cortland, N. Y.,	147 College Ave.
JAMES ALBERT KELSEY, B.S., Iowa Agricultural College. <i>Botany.</i>	Dunlap, Ia.,	64 College Ave.
FRANK LINCOLN STEVENS, B.L., Hobart College. <i>Botany.</i>	Syracuse, N. Y.,	Highland Park.
ROBERT BOORMAN STRONG, A.B., Princeton College. <i>Mathematics.</i>	New Brunswick,	Highland Park.
JAMES MONROE WHITE, M.S., Agricultural and Mechanical College of Mississippi. <i>Botany.</i>	Starkville, Miss.,	64 College Ave.

## SENIOR CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
WINFRED RUGAN ACKERT,	Poughkeepsie, N. Y.,	55 Winants Hall.
ALBERT DORRANCE BALDWIN,	Newark,	Chi Psi Lodge.
JOSEPH FREDERIC BERG,	Brooklyn, N. Y.,	26 Hertzog Hall.
CLARENCE HORNBECK BONNELL,	Port Jervis, N. Y.,	78 Winants Hall.
PHILIP MILLEDOLER BRETT,	Jersey City,	Delta Phi House.
HENRY ROBINSON BRISTOL,	Warsaw, N. Y.,	108 Winants Hall.
JAMES DICKSON CARR,	New York City,	117 Winants Hall.
THOMAS WESTON CHESTER,	New Brunswick,	64 College Ave.
GARRETT MILTON CONOVER,	Clinton,	81 Hertzog Hall.
DRURY WALLS COOPER,	New Brunswick,	108 George St.
CHARLES EDWARD CORWIN,	New Brunswick,	Hertzog Hall.
HARRY KIMBALL DAVIS,	Amsterdam, N. Y.,	118 Winants Hall.
HARRY THORNTON DAYTON,	New Brunswick,	Chi Psi Lodge.
CHALMERS PETER DYKE,	Grand Rapids, Mich.,	61 Winants Hall.
ROBERT EMMET FARLEY,	Fort Plain, N. Y.,	Delta Phi House.
GILBERT TERBELL GALE,	Bayonne City,	Chi Psi Lodge.
AMOS HOPPOCK HAINES,	Sergeantsville,	Somerset St.
JESSE CHARLES HAZZARD,	Oneonta, N. Y.,	Chi Psi Lodge.
GEORGE DE WITT KELSO,	Newburgh, N. Y.,	147 Bayard St.
ISAAC WILLIAM LOTT,	Flatlands, L. I.,	41 Hertzog Hall.
MITSUYE OI,	Tokio, Japan,	47 Hertzog Hall.
HENRY WEMPLE PAWLING,	Hagaman's Mills, N. Y.,	47 Hertzog Hall.
WALTER TRACY SCUDDER,	Tindivanam, India,	81 Hertzog Hall.
WILLIAM CARMAN SHERWOOD,	Jersey City,	Delta Phi House.
JAMES BISHOP THOMAS,	New Brunswick,	389 George St.
JAMES WESTFALL THOMPSON,	New Brunswick,	187 Somerset St.
FRANK VOORHEES,	Englewood,	5 Winants Hall.
ROBERT SUMNER WINN,	Madison, Wis.,	187 Somerset St.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
ANDREW HALL BERRY,	Elizabeth,	105 Winants Hall.
EUGENE BETTS,	Hackensack,	184 Winants Hall.
HOLMES EARLE BRUERE,	Cream Ridge.	12 Winants Hall.
GEORGE COLFAX BULLOCK,	Jacobstown,	Chi Psi Lodge.
WILLIAM JACOB COOPER,	New Brunswick,	108 George St.
PETER CONOVER FIELD,	New Brunswick,	881 George St.
HAROLD LYMAN HOYT,	New Brunswick,	1 Gulden St.
J. LIVINGSTON RUTGERS MORGAN,	New Brunswick,	47 Bayard St.
WILLIAM THOMAS MORRISON,	New Brunswick,	21 Schuyler St.
WILLIAM HEULINGS STAFFORD,	Haddonfield,	34 Winants Hall.
HENRY HEWGILL STEVENS,	New Brunswick,	Nicoll Ave.
FRANK ROBERTSON VAN HORN,	Johnsonsburg,	5 Winants Hall.
GARRETT SCOTT VOORHEES,	Bedminster,	5 Winants Hall.
HENRY EDWIN WATERS,	Rahway,	Rahway.
DANIEL GREGORY WRIGHT,	Elizabeth,	105 Winants Hall.
GEORGE HAMPTON WYCKOFF,	New Brunswick,	248 George St.

## JUNIOR CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
HENRY CHARLES CUSLER,	Catakill, N. Y.,	18 Hertzog Hall.
PAUL WINFRED GEYER,	New York City,	124 Winants Hall.
HENRY HARRINGTON JANEWAY,	New Brunswick,	192 Livingston Ave.
†DAVID BOUCK LOCKNER,	Lockport, N. Y.	
FRANK MALVEN,	Port Jervis, N. Y.,	Delta Phi House.
ROBERT DODGE MERRILL,	New Brunswick,	72 Easton Ave.
ISAAC MESSLER,	White House,	20 Hertzog Hall.
LOUIS HOWELL METTLER,	East Millstone,	Delta Phi House.
BURTON STEARNS PHILBROOK,	Jersey City,	97 Winants Hall.
FRANCIS BAIRD SANFORD,	Warwick, N. Y.,	58 Winants Hall.
HOBART EARL STUDLEY,	Hudson, N. Y.,	20 Hertzog Hall.
CHARLES EDWARD TINDELL,	New Brunswick,	214 Townsend St.
ISAAC J. VAN HEE,	Pultneyville, N. Y.,	10 Hertzog Hall.
FRANK M. VAN ORDEN,	Spring Valley, N. Y.,	118 Bayard St.
ELLIS ROBERT WOODRUFF,	New Brunswick,	78 Winants Hall.

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 † Left College.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
REGINALD BRIANT ALLEN,	Medford,	137 Winants Hall.
CHARLES STORR CHAMBERLAIN,	Madanapalle, India,	55 Winants Hall.
RICHARD STEVENS CONOVER, JR.,	New Brunswick,	218 Redmond St.
†FRANK VAN RENSSELAER COOPER,	Schenectady, N. Y.	
ALBERT HENRY DARNELL,	Mount Holly,	Zeta Psi House.
HORACE MUNSON DECKER,	Newark,	Newark.
PHILIP BEVIER HASBROUCK, JR.,	Libertyville, N. Y.,	Chi Psi Lodge.
JOSEPH ALLEN HEADLEY,	Union,	136 Winants Hall.
JAMES WALLACE HIGGINS,	Roselle,	137 Winants Hall.
PHILIP LINDSLEY,	Raritan,	67 Winants Hall.
CHARLES EDGAR LOVEJOY,	Elizabeth,	Elizabeth.
RICHARD SWANN LULL,	Trenton,	Chi Psi Lodge.
WILLIAM GEORGE MCKNIGHT,	New Brunswick,	58 Bayard St.
DANIEL HERBERT MCLAURY,	New Brunswick,	342 George St.
*GEORGE WASHINGTON MENDENHALL,	Bordentown.	
FRANK WILBUR REMSEN,	Blackwell's Mills,	Hertzog Hall.
EDNA FRED SCATTERGOOD,	Burlington,	135 Winants Hall.
HARRY NOE SELVAGE,	Bayonne City,	Chi Psi Lodge.
CLIFFORD STOCKTON SHAW,	Hyde Park, N. Y.,	104 Bayard St.
RICHARD STORMS,	Woodcliff,	116 Winants Hall.
VREELAND TOMPKINS,	Jersey City,	Delta Phi House.
DAVID HIGGINS TOWNLEY,	Elizabeth,	Zeta Psi House.
HENRY FRANCIS TWITCHELL,	Newark,	Chi Psi Lodge.
CHARLES HENRY EARL UTTER,	Newark,	Newark.
HERBERT METLAE WALDRON,	New Brunswick,	417 George St.
HOWARD VAN DEVENTER WALDRON,	New Brunswick,	417 George St.

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† Left College.

\* Died October 13th, 1891.

## SOPHOMORE CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
FREDERICK JACOB BARNY,	Bardonia, N. Y.,	121 Winants Hall.
WILLIAM EDGAR COMPTON,	New Brunswick,	20 Easton Ave.
HOLMES VAN METER DENNIS, JR.,	Freehold,	102 Winants Hall.
CHARLES MORISON DIXON,	New Brunswick,	87 New St.
ARTHUR EUGENE FIELD,	New Marlboro, Mass.,	144 Welton St.
FREDERICK CHRISTOPHER GRANT,	Plainfield,	Plainfield.
FREDERICK NELSON JACOBUS,	Newark,	Newark.
WILLIAM BOTSFORD JUDD,	Cranford,	Chi Psi Lodge.
EDGAR IRELAND McCULLY,	Little Falls,	16 Winants Hall.
HENRY MILLER,	New Brunswick,	117 Throop Ave.
OTTO LEOPOLD FREDERICK MOHN,	Beverly,	109 Winants Hall.
EDMUND PHILIP NISCHWITZ,	Warrenville,	131 Winants Hall.
PAUL QUATTLANDER OLIVER,	Bound Brook,	117 Bayard St.
*WALTER PFEIFFER,	Williamstown.	
JOHN AUGUSTUS SARLES,	Stelton,	Stelton.
†WILLARD R. SMITH,	Hallsville, N. Y.	
AUGUSTUS HOBART SMOCK,	Glen Head, N. Y.,	58 Bayard St.
THOMAS MORRIS STRONG,	Flatbush, N. Y.,	63 Winants Hall.
PHILIP COOK THOMAS,	New Brunswick,	389 George St.
JOHN HENRY THOMPSON,	New Brunswick,	137 Somerset St.
IRVING S. TOMPKINS,	Boonton,	42 Gulliden St.
FRANCIS CUYLER VAN DYCK, JR.,	New Brunswick,	84 College Ave.

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\* Died June 2d, 1891. † Died June 2d, 1891.



### Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
LEWIS AUGUSTUS ADAMS,	Lower Bank,	College Farm.
CHARLES FERDINAND BERGER,	Newark,	181 Winants Hall.
BERGEN DAVIS,	White House Station,	118 Winants Hall.
HOWARD DE MOTT,	Hackensack,	55 Winants Hall.
JOHN VAN NOSTRAND DORR,	Orange,	Zeta Psi House.
ABRAHAM CHARLES FOX,	Hurffville,	66 Winants Hall.
MOUNT DE BOW GRAVATT,	Clarksburgh,	College Farm.
DANIEL HAND,	Cape May C. H.,	70 Winants Hall.
HOWARD GODFREY HARRIS,	Bakersville,	54 New St.
RAYMOND STEELE HARRISON,	Verona,	131 Winants Hall.
JAMES KIRTLAND HOWARD,	New Brunswick,	151 Somerset St.
WILLIAM AMBROSE KINSEY,	Newark,	Newark.
ARTHUR WINSLOW KNAPP,	Elizabeth,	Chi Psi Lodge,
DAVID LAYTON,	Liberty Corner,	66 Winants Hall.
ISAAC ARTHUR LEE,	New Brunswick,	162 Somerset St.
CHARLES TOWNSEND LETSON,	Stelton,	Stelton.
HOWARD WARREN LUDLAM,	South Dennis,	Chi Psi Lodge.
WARREN SMITH MITCHELL,	Vineland,	College Farm.
THOMAS FRENCH RUSSUM,	Elizabeth,	Elizabeth.
YOSHIMARO TAKATSUJI,	New Brunswick,	Dean's.
GEORGE EDWARD TRACY,	Bayonne City,	11 Winants Hall.
FRED BENEDICT VAN BRAKLE,	Keyport,	12 Winants Hall.
GEORGE MOREHOUSE VAN DUZER,	Warwick, N. Y.,	102 Winants Hall.
LEONARD LOVEJOY WEIMORE,	Englewood,	Zeta Psi House.
MARSHALL WILLIAMS,	Blackwood,	214 Seaman St.
JAMES ALBERT WOODWARD,	Elizabeth,	Chi Psi Lodge.
JOSEPH JOHNSON YATES, JR.,	Elizabeth,	Elizabeth.

## FRESHMAN CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
WILBUR WITHEROW BALLAGH,	Tenafly,	81 Winants Hall.
WARD GAMEWELL BERRY,	Hackensack,	124 Winants Hall.
DAVID CAHART,	Rahway,	Rahway.
JOHN HAMILTON POTTER CONOVER,	New Brunswick,	218 Redmond St.
FRANK CORNELL EATON,	Ellenville, N. Y.	118 Winants Hall.
CHARLES WESLEY GULICK,	New Brunswick,	127 Bayard St.
HENRY UNDERHILL HART,	Neshanic,	70 Winants Hall.
GEORGE JACOB JANEWAY,	New Brunswick,	192 Livingston Ave.
FREDERICK WILLIAM JOHANKNECHT,	Jamaica, N. Y.,	121 Winants Hall.
DWIGHT CHAPIN LEFFERTS,	Flatbush, L. I.,	68 Winants Hall.
JOHN CONANT LOUD,	Brooklyn, N. Y.,	29 Winants Hall.
GEORGE SULLIVAN LUDLOW,	New Brunswick,	96 Bayard St.
ANTHONY HARRY ROTTGER,	Jamaica, N. Y.,	22 Hertsog Hall.
ROBERT ELLISON SOARE,	Walden, N. Y.,	21 Hardenbergh St.
JOHN PROVOST STOUT,	Raritan,	90 Winants Hall.
RUSSELL VAN ARSDALE,	Paterson,	Hertsog Hall.
THEODORE WILLIAM RUDOLPH VAN HET LOO,	Paterson,	77 Winants Hall.
WARREN CLARK VAN SLYKE,	Kingston, N. Y.,	40 Winants Hall.
HERMAN CHARLES WEBER,	Brooklyn, N. Y.,	1 Winants Hall.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
LOUIS DERBY AYRES,	Bergen Point,	62 Winants Hall.
PHILIP SHERIDAN BAILEY,	Toms River,	144 Welton St.
HAMILTON SCRYMSEER BATTIN,	Elizabeth,	Elizabeth.
JOHN GARRETTSON BLACKWELL,	Franklin Park,	95 Bayard St.
EUGENE BOBERT,	Harrington,	124 Winants Hall.
WILLIAM RYALL BURTIS,	Freehold,	17 Winants Hall.
JOHN HENRY CARNES,	Jersey City,	91 Bayard St.
ARTHUR MORGAN CLARK,	New Brunswick,	89 Bayard St.
ABRAM SCHUYLER CLARK,	New Brunswick,	13 Kirkpatrick St.
EDGAR STANLEY CONKLIN,	Pekin, Ill.,	43 Winants Hall.
CHARLES E. CONOVER,	Manalapan,	144 Welton St.
GEORGE HOWARD COWIE,	Rahway,	110 Winants Hall.
CHARLES MEIRS DENISE,	Allentown,	9 Winants Hall.
GEORGE RAY DESHLER,	New Brunswick,	116 Hamilton St.
FRANK VREKLAND DOBBINS,	Rahway,	Rahway.
FREDERICK WILLIAM ELLS,	Cranford,	Cranford.
GRINWILL HARRISON ENGLISH,	New Brunswick,	121 Paterson St.
JOHN MULFORD ENRIGHT,	Freehold,	17 Winants Hall.
AMOS HAINES FLAKE,	Medford,	147 Bayard St.
JOSEPH MILLSPAUGH FOWLER,	Walden, N. Y.,	9 Winants Hall.
FRANK KINGSLEY GRANT,	Schoharie, N. Y.,	30 Winants Hall.
ALANSON McDOWELL GRAY,	Elizabeth,	Elizabeth.
HENRY SEELEY HAMPTON,	Millville,	31 Winants Hall.
CLARENCE EUGENE FRANCIS HETRICK,	Asbury Park,	43 Winants Hall.
ALFRED HOSLE,	Poughkeepsie, N. Y.,	215 New St.
IRWIN WHITE HOWELL,	New Brunswick,	63 Paterson St.
EUGENE LINDSLEY HURLEY,	Rahway,	Rahway.
STANLY WOODRUFF JONES,	Rahway,	Rahway.
ROBERT BALLANTINE LITTELL,	Setauket, L. I.,	90 Winants Hall.
GABRIEL LUDLOW,	New Brunswick,	95 Bayard St.
JAMES ARTHUR MANDEVILLE,	Newark,	Newark.
EUGENE AUGUSTUS MEACHAM,	New Brunswick,	174 Easton Ave.
WILLIAM MONROE MOORE,	New Brunswick,	270 Somerset St.
IRVING WILLIAM MOTT,	Poughkeepsie, N. Y.,	215 New St.
CHARLES JOHNSON NEGUS,	Jersey City,	81 Winants Hall.
FRANKLIN PLEASANTS NOBLE,	Mendham,	113 Winants Hall.
WILLIAM O'CONNOR,	Paterson,	144 Welton St.
ROBERT KITCHING PAINTER,	New Brunswick,	5 Union St.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
WILLIAM FRANK PARKER,	New Brunswick,	154 Hamilton St.
ROBERT STEVENS PARSONS,	Paterson,	140 Winants Hall.
FREDERICK HARRISON PIERSON, JR.,	Elizabeth,	Elizabeth.
COURTLANDT FITZ RANDOLPH,	Bridgeton,	81 Winants Hall.
WALDO BERTH ROSENCRANTZ,	Cranford,	Cranford.
CLARKSON RUNYON, JR.,	New Brunswick,	14 Union St.
DAIHACHIRO SAGARA,	Tokio, Japan,	110 Winants Hall.
IRVING EMMONS SALMON,	Boonton,	118 Winants Hall.
GEORGE F. SCULL, JR.,	Atlantic City,	162 New St
ZUINGLIUS FRANCIS SHAFER,	Albany, N. Y.,	Millstone.
WILLIAM HARVEY STILSON,	Bayonne City,	Zeta Psi House.
CHESTER HARTRANFT TAPPING,	New Brunswick,	57 Schureman St.
WILLIAM VAN BERGEN VAN DYCK,	New Brunswick,	84 College Ave.
ALEXANDER BROKAW WAY,	New Brunswick,	147 Bayard St.
CHARLES AUGUSTUS WECKERLY,	Atlantic City,	162 New St.
JOHN WILLS,	Stanhope,	121 Winants Hall.
HOWARD STILLMAN WILSON,	Dunellen,	76 Winants Hall.

# SPECIAL STUDENTS.

NOT CANDIDATES FOR A DEGREE.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
ALBERT HUNTINGTON CHESTER, JR., <i>Latin, Modern Languages.</i>	New Brunswick,	64 College Ave.
FRED HENRY DECKER, <i>French, English, History.</i>	Little Falls, N. Y.,	99 Winants Hall.
MAURITZ FRED H. DE HAAS, <i>Chemistry</i>	Brooklyn, N. Y.,	84 Winants Hall.
GEORGE AUGUSTUS OAKES, <i>Chemistry, Physics.</i>	Bloomfield,	Zeta Psi House.
GEORGE ROBERT PERCY, <i>Political Economy, History, Physics, German.</i>	Jersey City,	91 Bayard St.
JONATHAN MANNING ROBERTS, <i>Chemistry, Biology.</i>	South Amboy,	South Amboy.
GEORGE BROWN SCHENCK, <i>Mental Philosophy, English Literature, History.</i>	Neshanic,	70 Winants Hall.
ALBERT HENRY SCHLIEDER, <i>Mental Philosophy, Greek, Modern Languages, History, Physics.</i>	West Leyden, N. Y.,	40 Winants Hall.
JOSEPH HENRY SEEBERGER, <i>Classics, English.</i>	West Troy, N. Y.,	121 Winants Hall.
JOHN ALBERT THURSTON, <i>Mental Philosophy, Greek, History.</i>	Pottersville,	81 Hertzog Hall.
ABRAHAM WILLARD TOTTEN, <i>Chemistry, Physics.</i>	Middlebush,	Middlebush.
BENJAMIN FRANKLIN WARD, <i>Mathematics, Political Economy, History.</i>	Hainesburg,	21 Hardenbergh St.
WALTER FARRINGTON WELLS, <i>Electricity, Mathematics.</i>	Rahway,	Rahway.

## SUMMARY.

	Classical.	Scientific.	Total.
Graduate Students.....	1	4	5
Seniors.....	28	16	44
Juniors.....	14	26	39
Sophomores.....	20	27	47
Freshmen.....	19	55	74
Special Students.....	6	7	13
Totals.....	88	134	222

## CLASSICAL DEPARTMENT.

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1. ADMISSION.

Examinations for admission to the College will be held on Monday and Tuesday of Commencement week, June 20th and 21st, 1892, beginning at 10 o'clock Monday morning. Applicants for admission may also be examined on Tuesday, September 20th, at 10 A. M. Students are advised to be present for examination in June.

From certain preparatory schools of approved standing, students are admitted upon the Principal's certificate.

Examinations for admission are both written and oral.

Candidates for admission to advanced classes must sustain a satisfactory examination upon the subjects previously studied by the class which they propose to enter, as well as upon those required for admission into the Freshman Class. Under this regulation, students are admitted at any time during the collegiate year.

Students who desire to pursue selected branches of study may do so, if properly prepared to pursue them with the regular classes. Special provision is made for such students in the Scientific Department. All such students are required to take examinations with the class with which they study, and sufficient work must be taken to occupy fully the student's time.

It is expected that students who present themselves will

be prepared, by careful study and by reviews of their work, to pass successfully a thorough examination on the subjects which are required.

Only such students are admitted with conditions as are, in the opinion of the examiners, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class.

Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that all entrance conditions will be made up before the Thanksgiving recess.

**SLOAN PRIZES FOR THE BEST ENTRANCE EXAMINATIONS,  
CLASSICAL COURSE.**

A FIRST PRIZE OF ONE HUNDRED DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills; and a SECOND PRIZE OF FIFTY DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills, established in 1883 by Hon. Samuel Sloan, of New York, a member of the Board of Trustees, will be awarded to the students who shall be adjudged by the examiners to have passed the best examination among the applicants for admission to the Freshman Class, in 1892. The cash prizes will be awarded, one-half at matriculation and one-half at the end of the second term of the Freshman year. The scholarship funds will be applied to cancel term bills for tuition during the course, and will be forfeited if the student's general average on the work of the year falls below 80 on a scale of 100.

## REQUIREMENTS FOR ADMISSION.

The following, or a full equivalent, are the requirements for admission to the Freshman Class:

## 1. LATIN.

Allen and Greenough's, or Andrews and Stoddard's, or Gildersleeve's, or Harkness' Latin Grammar, including the principles of Prosody.

Jones' Latin Composition, or the first forty-four sections of Arnold's Latin Prose Composition, or an equivalent.

Cæsar, Four Books of the Gallic War.

Sallust, Catiline.

Vergil, Æneid, six Books.

Seven Orations of Cicero, of which it is recommended that the orations for the Poet Archias, on the Manilian Law, and for Marcellus, shall be three.

The Fifth Book of Cæsar's Gallic War may be substituted for Cicero's oration for Marcellus.

Questions on the subject-matter, the history, the geography and the mythology involved in the Latin read. *Students will be tested in reading "at sight" easy Latin (e. g., Cæsar, Sallust, Cicero, Quintus Curtius); and a Map of Italy, to be drawn from memory, at the examination, will be required, together with familiarity with the classical geography of Gaul and Spain; and Smith's Smaller History of Rome (or an equivalent history of this period) to the time of the Empire.*

In preparing in Latin, the student should give close attention to the regular prose constructions of the language, and especially, in reading Cæsar or Sallust, to the forms of "indirect discourse." He should be thoroughly drilled in the use and the force of the moods and tenses, the consecution of tenses, the gerundive construction, etc., and should be taught to *analyze the sentence into subject and predicate, and the words, phrases or clauses which modify the subject and the predicate.* There should be frequent "Anticipatory Parsing."

The student should have as much exercise in writing Latin as possible. From the first, exercises in rendering English into Latin, both *orally* and in writing, are earnestly recommended.

The system of pronunciation followed is the Roman. For correctness of pronunciation, the rules of quantity are necessary to those who have not been thoroughly accustomed to the correct sound of the Latin words.



## 2. GREEK.

Hadley's or Goodwin's Greek Grammar, including the principles of Prosody, and of *Accentuation*.

Xenophon's *Anabasis*, three books, or an equal amount of Goodwin's Greek Reader.

Whitton's First Greek Book, entire; and Jones' Exercises in Greek Composition or Alinson's Greek Prose, entire.

Homer, The *Iliad*, three books (omitting the catalogue of the ships).

Questions on the subject-matter, etc., as above.

*Greek History will be required, Smith's Smaller History of Greece, or an equivalent; students will be tested at the entrance examinations in reading at sight easy Greek prose; and a map of Greece, with a good knowledge of the geography of the Greek Islands and of Asia Minor, will be required.*

The applicant must be thoroughly familiar with the leading principles of the whole Grammar, including accent, quantity and prosody.

In pronunciation, the accent must be followed in prose; but in poetry, regard will be had only to quantity.

Work done in reading other authors than those named in the requirements will be accepted, provided the pupil can pass upon a full equivalent.

## 3. MATHEMATICS.

Arithmetic complete, including the Metric System.

Algebra through Quadratic Equations, including Radicals; or the first fifteen chapters of Bowser's College Algebra.

Plane Geometry, four books of Bowser's, or an equivalent, *including Exercises*.

Careful attention should be given to the *exercises* in Geometry, as they greatly aid in acquiring readiness in geometrical reasoning.

Attention is especially called to the Metric System of Weights and Measures, a practical knowledge of which is indispensable, since it is used in the class-room; and to the *essential importance of a thorough preparation in the elements of Algebra*, on which subsequent success in Mathematics so much depends. The mistake is often made of passing too hurriedly over the first few chapters of Algebra. The whole book will be more quickly and surely mastered if the first part be studied slowly and thoroughly, with frequent reviews.

In preparing in Mathematics, the student should acquire a proficiency and readiness in the application of the principles; and to that end the careful solution of numerous and varied examples is earnestly recommended. It is also desirable to cultivate habits of neatness and order in the presentation of work on the blackboard or on paper.

## 4. THE ENGLISH BRANCHES.

Geography.

English Grammar.

Spelling.

History of the United States (Johnston's History of the United States).

Candidates for admission are examined in the History of the United States, with special reference to the colonization of the several States, the forms of government which existed previous to the War for Independence, the causes and principal events of that war, the period of the Confederation, the establishment of the Federal Constitution, with the general history subsequent to that event.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

A short English Essay is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1892, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Shakespeare's *Hamlet*; Goldsmith's *Deserted Village*; Hawthorne's *Scarlet Letter*; Burns' *Otter's Saturday Night*.

In 1893, students should be familiar with Scott's *Lady of the Lake*; Shakespeare's *Winter's Tale*; Irving's *Sketch Book*.

## 5. MODERN LANGUAGES.

In June, 1893, and thereafter, the elements of German Grammar will be required.

## 2. COURSE OF INSTRUCTION.

The Course of Instruction occupies four years, with three terms in each year.

The following is a scheme of the studies of the course. While it is subject to change in details, it exhibits the amount of work required of students during the four years, and indicates to candidates for advanced standing the equivalents which will be accepted from them. All the studies of the Freshman and Sophomore years are prescribed, and are intended to be of such a character as will furnish the sound basis of a liberal education, whatever profession or career is subsequently chosen. During the Junior and Senior years, certain subjects are prescribed for all candidates for a degree, while other subjects are arranged in elective courses.

The arrangement of these courses is a result of a recent careful revision of the curriculum, and is designed not only to carry further the general training of the student in the liberal arts, but also to promote his purpose to fit himself for the special occupation or profession which he may afterward follow.

The student makes his choice at the end of the Sophomore year, and the course then chosen is to be pursued in connection with the prescribed studies throughout the last two years.

## FRESHMAN CLASS.

*Exercises during each term of the year in Composition, Declamation and  
Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. LATIN.—Livy; Oral and Written Composition.....	4
2. GREEK.—Homer's Odyssey; Herodotus; Hesiod; Allinson's Greek Prose Composition, Part III.....	4
3. MATHEMATICS.—Bowser's Algebra, from Chapter XVII.....	4
4. RHETORIC.—Kellogg; Lectures; Essays.....	2
5. PHYSIOLOGY.—Comparative Biology; Lectures; Physiology, Martin...	1
6. CIVICS.....	1

## SECOND TERM, THIRTEEN WEEKS.

1. LATIN.—Cicero, De Amicitia; Horace, Odes; Composition; Latin Synonymes .....	5
2. GREEK.—Xenophon's Memorabilia; Pausanias; Anacreon; Sidgwick's Greek Prose Composition.....	5
3. MATHEMATICS.—Bowser's Algebra, completed; Bowser's Geometry...	3
4. ENGLISH LITERATURE.—History of the English Language.....	2
5. ZOOLOGY.—Comparative Anatomy; Lectures; Physiology, Martin.....	1

## THIRD TERM, TEN WEEKS.

1. LATIN.—Horace; Odes, Epodes, Ars Poetica.....	4
2. GREEK.—Lucian; Demosthenes' Olynthiacs; Buchholz's Greek Anth- ology, Part I.; Sidgwick's Greek Prose Composition.....	4
3. MATHEMATICS.—Bowser's Geometry, completed.....	4
4. BOTANY.—Gray.....	2
5. ENGLISH LITERATURE.—History of English Literature, Melkielejohn...	2

SOPHOMORE CLASS.

*Exercises throughout the year in Composition, Declamation and Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

FIRST TERM.

Hours a week.

1. LATIN.—Terence, Andria; Pliny's Letters.....	3
2. GREEK.—Plato's Apology and Crito; Euripides' Medea; Extracts from Macaulay's Essays, and Coleridge's Aids to Reflection, to be rendered into Greek.....	3
3. INORGANIC CHEMISTRY.—Lectures, with Experiments, Richter.....	4
4. MATHEMATICS.—Plane and Spherical Trigonometry, Bowser .....	3
5. GERMAN.—Whitney's Brief German Grammar.....	3

SECOND TERM.

1. LATIN.—Tacitus, Selections from Annales and Historiae.....	3
2. GREEK.—Thucydides, Narrative Extracts; Sophocles' Oedipus Rex; Extracts from Motley and Prescott, to be translated into Greek....	3
3. MATHEMATICS.—Bowser's Analytic Geometry.....	3
4. HISTORY.—Freeman.....	4
5. GERMAN.—German Reader.....	3

THIRD TERM.

1. LATIN.—Terence or Plautus; Catullus.....	3
2. GREEK.—Plato's Protagoras; Aristophanes' Birds, Knights; Extracts from Irving's Sketch Book, and The Spectator, for translation.....	3
3. MATHEMATICS.—Bowser's Analytic Geometry .....	3
4. HISTORY.—Freeman.....	4
5. GERMAN.—Classic Authors.....	3

## JUNIOR CLASS.

*Exercises throughout the year in Composition, Original Declamation and  
Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

## PRESCRIBED STUDIES.

	FIRST TERM.	Hours a week.
1. FRENCH.—Whitney's Brief French Grammar.....	3	
2. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy, and Lectures; Essays on Metaphysical Subjects.....	5	
3. PHYSICS.—Ganot; Lectures.....	2	
SECOND TERM.		
1. FRENCH.—Keetel's Analytical French Reader.....	3	
2. LOGIC.—Jevons-Hill's Logic.....	2	
3. PHYSICS.—Ganot; Lectures.....	2	
4. ASTRONOMY.—Young's Elements.....	3	
THIRD TERM.		
1. FRENCH.—Classic Authors.....	3	
2. PHYSICS.—Ganot; Lectures.....	2	
3. HISTORY OF CIVILIZATION.—Guizot; Essays.....	5	

## SENIOR CLASS.

*Exercises throughout the year in Composition, Original Declamation and  
Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

## PRESCRIBED STUDIES.

	FIRST TERM.	
1. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
2. GEOLOGY.—Geikie.....	3	
3. FINE ARTS.—Lectures.....	1	
SECOND TERM.		
1. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	
2. ETHICS.—English Bible; Manual on Evidences, Row.....	3	
3. FINE ARTS.—Lectures.....	1	
THIRD TERM.		
1. INTERNATIONAL LAW.....	4	
2. PRACTICAL ETHICS.—Hopkins' Law of Love.....	2	
3. MINERALOGY.....	2	
4. FINE ARTS.—Lectures.....	1	

## JUNIOR AND SENIOR CLASSES.

## ELECTIVE STUDIES.

The choice of an Elective Course, two subjects, is made at the end of the Sophomore year, and these subjects are pursued throughout the Junior and Senior years in addition to the prescribed schedule of studies.

## I. COURSES OF ELECTIVE STUDIES.

1. Course in Ancient Languages—Latin and Greek.
2. Course in Modern Languages—English, French and German.
3. Course in Mathematics and Science.
4. Course in History and Philosophy.

The recitation schedule will be so arranged that students may elect, instead of one of the above courses, any one of the following :

## II. GROUPS OF ELECTIVE STUDIES.

- |                           |                                 |
|---------------------------|---------------------------------|
| 1. Latin and French.      | 9. Greek and Philosophy.        |
| 2. Latin and Mathematics. | 10. French and Mathematics.     |
| 3. Latin and Science.     | 11. French and History.         |
| 4. Latin and History.     | 12. German and Mathematics.     |
| 5. Latin and Philosophy.  | 13. German and Science.         |
| 6. Greek and French.      | 14. German and History.         |
| 7. Greek and German.      | 15. German and Philosophy.      |
| 8. Greek and Science.     | 16. Mathematics and Philosophy. |
|                           | 17. Science and History.        |

Students choosing Science may still further elect to pursue—

1. Chemistry during the Junior year, with Physics during the Senior year.
2. Chemistry during the Junior year, with Biology during the Senior year.
3. Chemistry during the Junior year, with Geology and Mineralogy during the Senior year.
4. Biology during the Junior year, with Botany and Entomology during the Senior year.

Students electing the Course in Modern Languages will pursue German throughout the Junior and Senior years, English throughout the Junior year, and French throughout the Senior year.

## JUNIOR CLASS.

## ELECTIVE STUDIES.

1. *Course in Ancient Languages—Latin and Greek throughout the year.*

FIRST TERM.		Hours a week.
1. LATIN.—Roman Oratory; Selections from the Rhetorical Essays of Cicero, and from Quintilian.....		3
2. GREEK.—Demosthenes and Æschines on the Crown; Æschylus' Persæ; Euclid; Wilkins' Greek Prose Composition; Jelf's Greek Grammar, Vol. II.; Syntax; Extracts from Pilgrim's Progress, for translation.....		3
SECOND TERM		
1. LATIN.—Roman Philosophy; Selections from the Philosophical Essays of Cicero, and from Seneca and Lucretius.....		3
2. GREEK.—Thucydides, Speeches; Aristophanes' Clouds, Frogs, Wasps; Extracts from Swift, Sterne, Thackeray and Montaigne, for translation.....		3
THIRD TERM.		
1. LATIN.—Roman Law; Antejustinianian text: Bruns, <i>Fontes Iuris Romani</i> ; Huschke, <i>Iurisprudentiæ Antejustinianæ Quæ Supersunt</i> ; Development of the System.....		3
2. GREEK.—Plato, Republic; Pindar; Chrysostom, Homilies; Extracts from Butler's Analogy, and Pascal, Pensees, for translation.....		3

## SENIOR CLASS.

## ELECTIVE STUDIES.

1. *Course in Ancient Languages—Latin and Greek throughout the year.*

FIRST TERM.		
1. LATIN.—Roman Law and the Justinianian Redaction; The Institutes of Justinian, edited as a Recension of the Institutes of Gaius by T. E. Holland; Outlines of Roman Law, Morey.....		4
2. GREEK.—Aristotle, Organon; Parmenides; Xenophanes; Christian Hymns; Extracts from the Logical works of Mill and Hamilton, for translation.....		4
SECOND TERM.		
1. LATIN.—Roman Law; The Digest; Introduction to Justinian's Digest, with selected titles, Roby; Christian Latin; Latin Fathers and Hymns.....		4
2. GREEK.—Aristotle, Metaphysics; Plato, Parmenides; Theocritus, Sappho; Greek Epigrams; Menander; Extracts from Kant's Kritik, and Schopenhauer's Die Welt als Wille und Vorstellung, for translation into Greek.....		4
THIRD TERM.		
1. LATIN.—Roman Topography and Archaeology; Shumway's "A Day in Ancient Rome;" Illustrated Lectures.....		4
2. GREEK.—Plato, Timæus; Aristotle, De Anima; Lycophron's Alexandra; Heraclitus, Fragmenta; Extracts from Bacon's Novum Organum and Whewell's History of the Inductive Sciences, for translation.....		4



JUNIOR CLASS.

ELECTIVE STUDIES.

1. *Course in Modern Languages—English and German throughout the year.*

FIRST TERM.

Hours a week.

- |  |   |
|--|---|
| 1. ENGLISH.—English Authors.....   | 3 |
| 2. GERMAN.—Wilhelm Tell, or another play of Schiller; German Prose Composition and Conversational German throughout the Junior and Senior years..... | 3 |

SECOND TERM.

- |   |   |
|---|---|
| 1. ENGLISH.—Poetics.....                                  | 3 |
| 2. GERMAN.—Faust, Part I., or another play of Goethe..... | 3 |

THIRD TERM.

- |   |   |
|---|---|
| 1. ENGLISH.—Sweet's Anglo-Saxon Primer; Chaucer.....            | 3 |
| 2. GERMAN.—Minna von Barnhelm, or another play of Lessing. .... | 3 |

SENIOR CLASS.

ELECTIVE STUDIES.

2. *Course in Modern Languages—French and German throughout the year.*

FIRST TERM.

- |  |   |
|--|---|
| 1. FRENCH.—The Classic Drama; Corneille; Moliere; Histoire de la Litterature Francaise; Composition and Conversational French throughout the year..... | 4 |
| 2. GERMAN.—German Literature. Scherer, with lectures. The classroom work will be conducted entirely in German during the Senior year.....              | 4 |

SECOND TERM.

- |   |   |
|---|---|
| 1. FRENCH.—Old French; Grammar; Phonology; Chanson de Roland. | 4 |
| 2. GERMAN.—Middle High German; Grammar; The Niebelungen Lied. | 4 |

THIRD TERM.

- |  |   |
|--|---|
| 1. FRENCH.—The Novel of the Romantic School, Hugo; Balzac; Merimee; Sand; Lyric Poetry at sight..... | 4 |
| 2. GERMAN.—Sight Reading of the German Lyric Poetry, with German Essays in literary criticism.....   | 4 |

### JUNIOR CLASS.

### ELECTIVE STUDIES.

**3. Course in Mathematics and Science—Mathematics and Chemistry, or Biology, throughout the year.**

**FIRST TERM.**

**Hours a week.**

- |  |   |
|--|---|
| 1. MATHEMATICS.—Differential and Integral Calculus, Bowser.....          | 3 |
| 2. SCIENCE.—a. Chemistry.—Experimental Chemistry; Blowpipe Analysis..... | 3 |
| b. Biology.—General Biology and Invertebrate Zoology.....                | 3 |

## SECOND TERM.

- |   |   |
|---|---|
| 1. MATHEMATICS.—Differential and Integral Calculus, Bowser..... | 3 |
| 2. SCIENCE.—a. Chemistry.—Qualitative Analysis.....             | 3 |
| b. Biology.—Invertebrate Zoology.....                           | 3 |

**THIRD TERM.**

- |   |   |
|---|---|
| 1. MATHEMATICS.—Method of Least Squares; Introduction to Mathematical Astronomy.....  | 3 |
| 2. SCIENCE.—a. Chemistry.—Qualitative Analysis, completed; Quantitative Analysis..... | 3 |
| b. Biology.—Botany and Entomology.....  | 3 |

### SENIOR CLASS.

### ELECTIVE STUDIES.

*3. Course in Mathematics and Science—Mathematics and Physics, or Biology, or Botany and Entomology, or Geology and Mineralogy, throughout the year.*

**FIRST TERM.**

- |  |   |
|--|---|
| 1. MATHEMATICS.—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures..... | 4 |
| 2. SCIENCE.—a. Physics.—Mechanics; Light; Laboratory Practice.....                       | 4 |
| b. Biology.—General Biology and Invertebrate Zoology....                                 | 4 |
| c. Geology and Mineralogy.....   | 4 |
| d. Botany and Entomology.—Embryology; Osteology.....                                     | 4 |

## SECOND TERM.

- |   |   |
|---|---|
| 1. MATHEMATICS.—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures.....        | 4 |
| 2. SCIENCE.—a. Physics.—Heat; Electricity; Laboratory Practice.....                             | 4 |
| b. Biology.—Invertebrate Zoology.....   | 4 |
| c. Geology and Mineralogy.....  | 4 |
| d. Botany and Entomology.—Histology; Anatomy and Physiology; Lectures; Laboratory Practice..... | 4 |

**THIRD TERM.**

- |  |   |
|--|---|
| 1. MATHEMATICS.—Higher Mathematics; Practical Astronomy; Observ-<br>atory Work; Lectures ..... | 4 |
| 2. SCIENCE.—a. Physics.—Electricity; Sound; Laboratory Practice. ....                          | 4 |
| b. Biology.—Botany and Entomology.....   | 4 |
| c. Geology and Mineralogy.....   | 4 |
| d. Botany and Entomology.....  | 4 |

## JUNIOR CLASS.

## ELECTIVE STUDIES.

4. *Course in History and Philosophy.*

## FIRST TERM.

Hours a week.

1. HISTORY.—The Periods of the Renaissance and Reformation..... 3  
 2. MORAL PHILOSOPHY.—Butler's Analogy..... 3

## SECOND TERM.

1. HISTORY.—The Periods of the Renaissance and Reformation, continued..... 3  
 2. MENTAL PHILOSOPHY.—Outlines of the History of Greek Philosophy, Zeller; portions of Schwegler's History of Philosophy; Lectures; Theses..... 3

## THIRD TERM.

1. HISTORY.—English Constitutional History..... 3  
 2. MENTAL PHILOSOPHY.—First and Fundamental Truths, McCosh; Lectures; Theses..... 3

## SENIOR CLASS.

## ELECTIVE STUDIES.

4. *Course in History and Philosophy.*

## FIRST TERM.

1. HISTORY.—Critical Study of American History; Reports upon current Historical and Economic Literature..... 4  
 2. MORAL PHILOSOPHY..... 4

## SECOND TERM.

1. HISTORY.—Critical Study of American History, continued; Comparative Study of the Modern Constitutions; Reports upon current Historical and Economic Literature..... 4  
 2. MORAL PHILOSOPHY..... 4

## THIRD TERM.

1. HISTORY.—Comparative Study of the Modern Constitutions; Reports upon current Historical and Economic Literature..... 4  
 2. ARCHITECTURE..... 4

## LATIN.

In the early part of the course in the Latin Language and Literature, the student is aided in mastering the language of the chief writers of the late Republic and early Empire.

At first, the sentence is studied analytically, regarding the value and disposition of clauses and phrases. Then the significance of particular words is sought by inspection of their derivation and by comparison with their actual synonymes. Auxiliary to both of these aims, composition, based on the text which is being read, is practiced in set written and oral exercises; and Latin questions, with extemporaneous answers in Latin, following an inductive colloquial method, are employed according to the progress of the student.

The attention of the student is directed to the differences in syntax and diction of the various periods and authors, and as his familiarity with the language increases, he is led to examine critically the author's literary characteristics. As leading writers of the Republic and early Empire, the Minor Course includes Plautus or Terence, Cicero, Catullus, Livy, Horace, Tacitus and Pliny the Younger.

In the Elective Course is offered a course in Roman Law. At first, antejustinianian text is read, with a rapid review of the historical development of the law from the Twelve Tables to Justinian, touching upon the changes produced by Prætor and Jurisconsult, and the influence of Stoicism and Christianity. Later, Justinian's Redaction is studied, with reading of the Institutes and excerpts—with at least one full title—from the Digest. The chief

object here is not to re-arrange the subject-matter into a code, but to catch the Roman Jurist's way of looking at legal questions, by following, in a general way, the order of the Institutes, supplementing that elementary work by citation of the larger works.

A course of illustrated lectures on Roman Topography and Archæology is given, treating such subjects as the Public and Private Buildings of Rome and Pompeii, the Art and Life of the Romans.

Other subjects of study may be: Roman Oratory, with the reading of Quintilian and Cicero; Roman Philosophy, with the reading of Seneca, Cicero, Lucretius; Christian Latin, with reading from Tertullian, Lactantius, Augustine and Latin Hymns.

#### GREEK.

The objects aimed at, in the order of time and attention given, are:

1. To master the grammatical structure of the language.
2. To be able to appreciate the strength and beauty of its literature.
3. To trace the influence of its thought on human culture.
4. To know the Civil History and Inner Life of its people.

In order to attain these objects the instruction during the first two years is largely to make the student acquainted with the forms of the language, and the meaning of its words, as an instrument for the expression of thought. This work is required, and is the same for all who take the

classical course. During the two subsequent years the aim will be to enable the pupil to comprehend the thought, and enter into the life of the people; and thus avail himself, as far as possible, of all the influences which the culture of Greece has had on the world's progress. Accordingly, the elements of the language will not be taught as dead forms, but as living realities. In reproducing Greek thought, words will be considered as the counterparts of things, and the two indissolubly united.

A new language must be learned by careful attention to its forms, its syntax, and the meaning of its words before we can make it the vehicle of our thoughts. The aim is constant to reach the second stage as soon as possible. Some pupils will never reach it. But, with fair preparation for entering College, anyone of ordinary intelligence and application may reach it in the required work of the first two years. All then may become able, and those who do, and desire to profit by whatever Greek culture means, will have the opportunity by electing this course for the two remaining years. The earlier and prescribed course must necessarily be conducted in the spirit of the Gymnasium and the old college methods. The subsequent period combines the University and Seminary systems. Two-thirds of the time on an average must be given to translation from Greek to English; one-third from English to Greek. This alternate translation is believed to be indispensable to the mastery of any language. In pursuance of this idea there will be used such extracts from the best English writers as correspond most nearly with the style and progressive difficulty of the Greek authors read. For the earlier and

easier work, anecdotes and episodes in plain historical narrative will be selected. For the more mature scholar such extracts from the essayists, novelists, philosophic historians and metaphysicians will be chosen as give a fair synopsis of the best English style, and exhibit something from the most distinguished thinkers of other tongues. In reproducing this variety in Greek the pupil will become able to think in this language on those subjects which most nearly concern a man of culture, and to express himself as an educated Athenian did at the time the language was at its highest excellence.

The course of instruction is intended to embrace at least one complete treatise from a leading author belonging to each period, from Homer to Lucian. While the amount read is indicated by the Catalogue, it is the purpose to vary the authors, or the portions from the same author, from year to year.

Promising students are encouraged to take special courses of study, in addition to the regular class work; and private instruction is constantly given. The following books of reference are recommended: Smith's Classical Dictionaries, 6 Vols.; Jelf's and Krüger's Greek Grammars, and Kühner's *ausführliche griechische Grammatik*; Liddell and Scott's *Lexicon*, 7th Oxford Edition; Grote's *History of Greece*, and Mahaffy's *History of Greek Literature*.

#### MODERN LANGUAGES.

ENGLISH LANGUAGE AND LITERATURE.—The course in English embraces, with the elective study of Anglo-Saxon,

the required study of the history of the English language and its literature, and the critical reading of English classics. A course of private reading is prescribed, upon which examinations are held. Essays in literary criticism are required during the Sophomore year. The elective study of the language and literature is pursued during the Junior year.

**GERMAN.**—German is taught three hours per week throughout the Sophomore year as a required subject. During the first term, the grammar is the main object of study, with constant practice in the translation of illustrative sentences, both from German into English and from English into German. At the same time the student is required to learn day by day, short vocabularies of commonly-used words, for conversational drill in the classroom. In the second term easy German prose is read, both in set lessons and at sight, and in the third, selections from standard authors for careful translation and for literary analysis. It is the aim of the required course in German to give all the students a competent knowledge of the grammar, and a sufficiently large vocabulary to be able to read ordinary prose with ease, and to pursue further study by themselves without difficulty.

In the Junior and Senior years German is made one of the eight elective subjects, three hours per week throughout the Junior and four hours throughout the Senior year. The students who choose this subject are taught not only the reading knowledge of modern German, but are drilled in connected conversation and in the



study of the older periods of the language from German text-books, the instruction throughout the Senior year being given entirely in the German language.

**FRENCH.**—French is taught three hours per week throughout the Junior year as a required study. A careful phonetic analysis of the pronunciation is insisted on, and the syntax is taught historically, presupposing a thorough acquaintance with the Latin grammar. In the second term a large amount of easy prose is read, with constant practice in translation both from French into English and from English into French. In the third term the harder authors are selected and the literary form is studied as well as the language itself. The required course is intended to give to all a practical acquaintance with the language, wide enough to enable them to read at sight any ordinary French prose.

In the Senior year French forms a part of one of the elective courses, being taught four hours a week to such as choose to pursue it.

#### **MATHEMATICS AND ASTRONOMY.**

The required studies in Mathematics include Algebra, Geometry, with problems and original exercises, Plane and Spherical Trigonometry, with their application to problems in Surveying and Navigation, and Analytic Geometry. These are the mathematical studies of the first two years.

**ELEMENTARY ASTRONOMY** is taught during the second term to all the members of the Junior Class.

The subject of mathematics may be pursued as an elective study throughout the Junior and Senior years.

Among the subjects offered in this course are the following :

The Differential and Integral Calculus.

The Method of Least Squares.

Introduction to Mathematical Astronomy.

Higher Mathematics.

Practical Astronomy, supplemented by observatory work and lectures.

The DANIEL S. SCHANCK OBSERVATORY is well equipped for the work of practical instruction, being supplied with a six and one-half inch refracting telescope with position micrometer, a meridian circle with four-inch object glass, a reflecting repeating circle and other instruments. It is in telegraphic connection with other observatories.

The Observatory was designed and is used not only for independent work but for the instruction of students in the theory and the use of astronomical instruments, and in practical observatory work. It affords to students unusual facilities for learning how to use astronomical instruments.

#### CHEMISTRY.

INORGANIC CHEMISTRY is taught from a text-book, and fully illustrated by lectures which demonstrate experimentally the points made in the book. The course covers the first term of Sophomore year, with exercises four hours each week. The intention is to give each student such a general knowledge of the science as every educated man should possess. Provision is made in an elective course for those who wish to pursue the subject further.

**ELECTIVE CHEMISTRY.**—In the Junior and Senior years, students may elect a course in Analytical Chemistry with Laboratory Practice and Lectures. The experimental studies in this department have proved both attractive and profitable to those intending to devote themselves to Law or Medicine, or to business pursuits, as well as to men who intend to teach or to pursue lines of work immediately connected with chemistry and its applications.

The pupil begins by making the experiments in Remsen's Chemistry, thus acquiring by actual experience a familiarity with chemical substances and chemical phenomena.

The study of *Qualitative Analysis* is next taken up. The student makes the test, studies the reactions, and proceeds rapidly from analysis of simple substances to the more complex. The method here followed of keeping notes of every step affords the student valuable practice in the three divisions of experimental science—Experiment, Observation and Inference. The theory of analysis is explained in the lectures and recitations on the subject. In connection with this subject, *Blowpipe Analysis* is also taught.

Students able to finish the foregoing before the end of the College year, proceed to *Quantitative Analysis*. The instruction in this subject will not be so much on detail as on general principles and construction and use of apparatus. Typical salts of known composition are analyzed gravimetrically and volumetrically, and then substances requiring for their determination carefully-constructed apparatus.

## MINERALOGY.

A course of lectures in Mineralogy is given to the Senior Class, in which free use is made of the valuable mineral collections of the College, by means of which the characteristics of the most important mineral species are illustrated and explained. *Crystallography* is made part of this course, being fully illustrated by glass and wooden models.

## PHYSICS.

This subject is taught by lectures, and copious additions are made to the matter of the text-book. Each point is demonstrated as far as possible; and the relations of the subject to ordinary natural phenomena, the processes of the industrial arts, etc., are pointed out. Students are encouraged to use the apparatus under the direction of the Professor in charge, and are trained to distinguish the essential from the casual conditions of experiments, as well as to infer from scientific data *no more* than is certain and warranted. The course begins with Mechanics and proceeds to Heat, Electricity, Sound and Light.

The apparatus is well fitted to illustrate all principles, and such additions are made to it as the industrial applications of science demand.

**ELECTIVE PHYSICS.**—During the Senior year of the Classical Course, Physics is an elective study.

The object of this elective is to furnish a sound, practical foundation to those who expect to engage in industrial pursuits, or in professions which demand acquaintance

with the principles of Physics. The work consists of a course of laboratory exercises such as is set forth in Stewart and Gee's Practical Physics, besides many of the experiments described in the text-book used in the lecture course. The facilities of the Physical Laboratory have been greatly increased during the past year, so that all essentials are available to students.

#### BIOLOGY.

**PHYSIOLOGY AND ZOOLOGY.**—Required one hour per week, during the first two terms of the Freshman year. The method of instruction is by lectures and quizzes, supplemented by demonstrations from charts, specimens, dissections, and Auzoux models. The aim is to give the student a bird's-eye view of the principles of Physiology, the structure of animals, and such an acquaintance with the facts of Zoology as shall enable him later to pursue psychological and geological studies with increased profit.

**GENERAL BIOLOGY.**—Elective in the Junior and Senior years. The distinctive studies of the Course in Biology of the Scientific School must be chosen. The time required is three morning hours and two afternoons in the Junior year, and four morning hours and two afternoons in the Senior year. One-half of this time during the first two terms of each year will be pursued with the Professor of Biology. A detailed account of the studies of this portion of the course is given under the sub-head of General Biology for the Scientific School. The remaining time for the Biological Elective is divided between the Professors of Botany and of Entomology.

**BOTANY.**

Students in all courses take Botany two hours per week in the Spring term of the Freshman year. Gray's "Revised Lessons" is used as the text-book in descriptive Botany, and in connection with this, the students familiarize themselves with the methods of plant analysis. Each point considered is, as far as possible, illustrated by living specimens, either grown in the laboratory for purposes of dissection or collected in the fields and forests. Students are taught the methods of preparing and mounting specimens as abundantly seen in the College Herbarium.

The work of the Junior and Senior years, required in the Courses in Agriculture and Biology, is open for election by the students of the corresponding years in all the classical courses.

**HISTORY AND POLITICAL SCIENCE.**

The study of History in the Classical Department is begun in the second term of Sophomore year with the use of a text-book as a guide. The course is planned to cover European history, in outline, from the beginning of the Empire to the outbreak of the French Revolution. The progress of the greater movements in political and social development is traced, and emphasis is laid upon the formation and growth of modern States. In this required part of the course the method of instruction is to some extent topical, and aims to furnish information essential to good citizenship, to cultivate a habit of investigation, and to teach the student how to come to independent con-

clusions. Students are encouraged to use the library, are given direction in methods of historical work, and are taught the value of historical sources. A constant use of the historical atlas is required of the student throughout the prescribed courses.

For students in the Scientific Department, a corresponding course in general European history is given in the first and second terms of the Junior year. In the third term, Guizot's History of Civilization in Europe is used as a text-book by both sections of the class.

The lectures before the class and the subjects assigned for essays are intended to stimulate a desire to understand the ideas which underlie the causes of events, and which give to history its continuity and unity.

**ELECTIVE HISTORY.**—Elective courses are open to Juniors and Seniors, offering facilities for advanced and systematic work in special periods of history, and for a study of the origin and development of political institutions. The courses include both European and American history.

The method of study is by lectures and topics. It aims to cultivate a spirit of original research and places emphasis upon library investigations. For students of the Senior Class a seminary of History and Politics is organized, in which papers embracing the results of independent original study are reported.

The following is an outline of the proposed elective courses :

## JUNIOR YEAR.

*I. The Periods of the Renaissance and the Reformation.*

The work will consist chiefly of library investigations and critical examinations of reports growing out of these investigations. The class will meet three times each week during the first and second terms.

*II. English Constitutional History.*

Instruction will be given by text-books, lectures and required readings on assigned topics. This is taken as an introduction to American History. Three times each week during the third term.

## SENIOR YEAR.

*III. Colonial History of America, followed by the Constitutional and Political History of the United States.*

The methods of instruction are in general the same as in the Junior year. It is designed to be a critical study of American history. Attention is especially given to the growth of nationality and to the development of the Constitution. Three hours during the first and second terms.

*IV. Comparative Study of the Modern Constitutions.*

In this course the Constitutions of modern European States are studied and compared with that of the United States. A part of the second and the third term, three hours each week.

*V. Seminary of History and Politics.*

This is designed for original investigations, and for reports upon the current historical and economic literature. One hour each week throughout the year.



**POLITICAL ECONOMY.**—The Senior Class, in both the Classical and Scientific Departments, receives instruction in the principles of Political Economy four hours weekly during the first term. In addition to the use of a text-book, lectures, formal and informal, are given, discussions are held, special topics are assigned to individuals for careful study, the results of which are read before the class and an essay is prepared by the whole class on some subject chosen from a number relating to this science.

**CONSTITUTIONAL LAW.**—The Senior Class in both departments, pursues the study of Constitutional Law four hours weekly during the Winter term. Cooley's Principles of Constitutional Law is used as a text-book. Lectures are read by the President before the class on the historical development of the Constitution and some of the more important decisions of the Supreme Court are analyzed, for example those relating to the prohibition of State laws impairing the Obligation of Contracts, the Legal Tender Cases and others of importance and paramount significance. The aim is to ground all the students in a knowledge of the elements of Constitutional Law and to give a special preparation to those about to choose the profession of the law. This is particularly kept in view in assigning the subjects for the essays which accompany the other work of the term.

**INTERNATIONAL LAW.**—This subject is taken up the last term of the Senior year. Lectures are given by the President four hours weekly. The peculiar character of this

branch of law is dwelt upon, its development, the authorities and sources, and its present status.

**CIVICS.**—The President meets the Freshman Class of both departments one hour each week for their instruction by use of text-book and lecture in the elements of Civics and the duties of the citizen.

**MORAL PHILOSOPHY, CHRISTIAN EVIDENCES AND THE  
ENGLISH BIBLE.**

During the first term of the Junior and Senior years an elective course is given by the Theodore Frelinghuysen Professor of Ethics. The text-book used will be Butler's Analogy.

In the second term the Classical section of the Seniors will have in the prescribed course Lectures on the English Bible, with special regard paid to its history and literary merits. There will also be given a brief review of Christian Evidences, the text-book being the Manual on Evidences, by Prebendary Row, of London.

In the third term both sections of the Seniors will be instructed in Practical Ethics, the text-book being the "Law of Love," by Dr. Mark Hopkins.

**METAPHYSICS AND LOGIC.**

**MENTAL PHILOSOPHY.**—The Juniors are required to prepare five recitations a week in Porter's Elements of Intellectual Philosophy during the first term. Lectures are delivered on the brain and its connection with the mind, and on kindred topics relating to the nervous system. The

results of recent critical discussions on philosophical and metaphysical questions, together with comments, are fully interspersed through the daily recitations.

**ELECTIVE COURSE IN PHILOSOPHY.**—This course, consisting of three recitations a week, extends through the second and third terms of the Junior year. It embraces the History of Philosophical Speculation, together with lectures on the most distinguished representatives of various distinctive systems. The students are obliged to present carefully-written results of their own researches on assigned subjects, in addition to the pursuit of regular text-books. It is hoped to inspire by this course such a love of high and critical thought as to lead members of the class to continue through life to make attainments in the same direction. The class-room work will consist of recitations in Zeller's Outlines of the History of Greek Philosophy, portions of Schwegler's History of Philosophy, relating to modern schools, McCosh's First and Fundamental Truths, lectures on Descartes, Leibnitz, Locke, Reid, Kant, Hegel, etc., by the Professor, and theses by the students, giving the results of their own researches along specified lines and subjects.

**LOGIC.**—Jevons-Hill's text-book is used for two recitations a week during the second term. Special care is taken to enforce a practical application of logical formulas in the resolution of arguments and the detection of sophistries. To this end, illustrative examples are drawn from different authors and much oral instruction is given.

## RHETORIC.

ELOCUTION.—The aim is to develop effective delivery in forms of expression. The scope of instruction embraces Physical Culture, Respiration, a Training of the Voice and a cultivation of the powers by which thought is analyzed and presented in synthetic expression.

RHETORIC.—In the department of Rhetoric, begun during the Freshman year, an effort is made to teach the principles of Composition, not as laid down in mechanical rules, but as springing from psychological laws and relations. Ideas presented in accordance with various mental requirements and influences are shown to contain the true philosophy of rational and effective discourse.

Illustrative references to the Masterpieces of Oratory, and to other forms of the best English Classical Literature, are freely given. Essays are required throughout the entire course.

EXTEMPORE SPEAKING.—The *Bussing Prizes* for excellence in *extempore* speaking, recently founded, are designed to cultivate the habit of presenting clearly, forcibly and accurately, and in a manner to convince an audience, the facts and ideas a student has upon themes with which he may fairly be supposed to be somewhat conversant. The repeated competition for these prizes during the four years of the College course has already produced excellent effects.

## THE FINE ARTS.

At the stated meeting of the Board of Trustees, in October of the present year, John C. Van Dyke, L.H.D.,

was appointed Professor of the History of Art, and the Department of Art and Archæology was organized. The residence of former Presidents of the College has been refitted for the uses of this department, and is to be known as the Fine Arts Building. It will contain the art collections of the College, including "The Thomas L. Janeway, M.D., Memorial Collection" of casts, and the various pictures, models, casts and photographs are arranged to represent, as far as possible, the art of the world. A new lecture-room, having adequate facilities for illustrating lectures by the stereopticon and otherwise, is ready for use, and the arranging and classifying of the Museum is going forward. Besides the lectures of the Professor in charge of this department and of other Professors of the College, subjects related to the fine arts will be treated from time to time by other lecturers.

**ARCHITECTURE.**—Architecture is an elective occupying four hours per week during the third term of the Senior year. Several hundreds of views are thrown upon the screen by a stereopticon illumined with electric light, in illustration of the different orders and styles of buildings that have prevailed among different nations in successive periods. Lectures accompany the views and afford also much information on statuary, painting and other fine arts connected with architecture.

**PAINTING.**—During the second and third terms of this year there will be for the Seniors a course of lectures on Old Italian and Modern French Painting, covering the ground in Italy from early Christian times to the Decad-

ence following the Renaissance; and in France from the time of Francis I. to the present day. All of these lectures will be illustrated by lantern slides of the masterpieces of painting.

**SCULPTURE.**—For students of the Senior year there has been formed a class for the study of classical archæology. The method employed involves the reading of Latin authorities and essays by the student, with criticism and lectures by the Professor. “The Thomas L. Janeway, M.D., Memorial Collection” in the Fine Arts Building supplies copious illustration.

#### PHYSICAL DEVELOPMENT.

**GYMNASIUM.**—The excellent Gymnasium in Suydam Hall, three minutes' walk from the College buildings, by the courtesy of the Theological Seminary of the Reformed Church, has been opened to the daily use of the students of the College.

A thoroughly qualified Instructor is in attendance, and students of the two lower classes are required to take systematic exercise in the Gymnasium, under his direction and supervision.

**ATHLETICS.**—In order to secure for the students the benefits of out-of-door exercise, athletic sports are encouraged by the provision of adequate facilities. Rightly controlled, such sports have shown themselves beneficial both to the health of the students and to the quality of the work done, and are manifestly in the interest of good order. The more prominent athletes have been generally

among the more earnest and successful students. The proper control of athletics has been secured by the organization of an incorporated athletic association, supported by the students and managed by a board of nine trustees, chiefly composed of resident alumni. In this board the Faculty has always had one or more representatives, and in this way a cordial co-operation has been steadily maintained between Faculty and students, avoiding the need for the exercise of direct authority.

**THE NEW ATHLETIC FIELD.**—By the generosity of Mr. James Neilson, of New Brunswick, an alumnus and Trustee of the College, there is now provided an athletic field containing more than five acres and at a walking distance of about eight minutes from the College campus.

About five thousand dollars have been spent in improving this field and providing proper accommodations. A commodious grand stand has been erected, with dressing-rooms and bath-rooms attached, and everything has been done to make the field as nearly perfect as possible and to render it practically useful to the students.

## SCIENTIFIC DEPARTMENT.

## RUTGERS SCIENTIFIC SCHOOL,

BY ACT OF THE LEGISLATURE CONSTITUTED THE STATE COLLEGE FOR THE  
BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS.

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(APPOINTED BY THE GOVERNOR.)

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\* Died November 20th, 1891.



### 1. ADMISSION.

Every applicant for admission must be at least sixteen years of age, and must submit to the President proper testimonials of a good moral character. If an applicant for a Free State Scholarship, he must also present to the President a certificate of appointment.

Examinations for admission will be held on the same days as for the Classical Department, viz. : On the Monday and Tuesday preceding Commencement, June 20th and 21st, 1892, beginning at 10 o'clock A. M. on Monday, in the President's office. Applicants for admission may also be examined on Tuesday, September 20th, at the same hour and place ; but all students who can conveniently do so, are advised to be present in June.

From certain preparatory schools of established reputation students are admitted without examination, upon the Principal's certificate that they have completed the required amount of work and are prepared to enter College. Blanks for such certificates will be furnished upon application to the Registrar, Mr. IRVING S. UPSON, or to the President of the College. Students may enter an advanced class either at the beginning of the College year or at other times, if they sustain a satisfactory examination both on the preliminary studies and on those already passed over by the class which they propose to enter.

Provision is made for such students as wish to devote themselves to special subjects, if they are prepared to study

profitably with the regular classes in those subjects; but special students are required to take sufficient work fully to occupy their entire time.

#### REQUIREMENTS FOR ADMISSION.

The following are the subjects in which those who wish to enter the Freshman Class of the Scientific Department are examined. Since all are such as can be acquired in our best common schools, it is insisted that the preparation in them shall be thorough and complete. The general regulations as to conditions and their removal will be the same as those which apply to the Classical Course, and may be found on page 21.

1. **ARITHMETIC.**—Fundamental Operations; Common and Decimal Fractions; Denominate Numbers, including the Metric System; Percentage, including Interest and Discount; Proportion; Square and Cube Root.

2. **ALGEBRA** through Arithmetic, Geometric and Harmonic Progressions, or the first seventeen chapters of Bowser's College Algebra.

3. **PLANE GEOMETRY.**—The *whole* of Plane Geometry will be required.

4. **ENGLISH GRAMMAR**—including Spelling.

5. **DESCRIPTIVE GEOGRAPHY.**

6. **PHYSICAL GEOGRAPHY.**

7. **HISTORY OF THE UNITED STATES.**—Johnston's History of the United States, or its equivalent

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

8. Such a knowledge of Elementary PHYSICS and CHEMISTRY as may be obtained from Peck's Ganot's Physics, or Wells' Natural Philosophy, and Valentine's Twenty Lessons in Chemistry, or Cooley's or Steele's Chemistry, is required for admission.

2. A short ENGLISH ESSAY is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1892, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Shakespeare's *Hamlet*; Goldsmith's *Deserted Village*; Hawthorne's *Scarlet Letter*; Burns' *Cotter's Saturday Night*.

In 1893 students should be familiar with Scott's *Lady of the Lake*; Shakespeare's *Winter's Tale*; Irving's *Sketch Book*.

In preparing the student for this course, it is recommended that he be drilled thoroughly in *Arithmetic*, as a clear understanding of its simple elementary and practical principles is essential to a good *Mathematician*. His preparation in *Algebra* should be very thorough. In addition to understanding the PRINCIPLES of the science, he must fix them in his memory, and learn their bearing and utility, and for this reason he should pay great attention to the solution of practical examples. What is needed is ability to solve ordinary examples with facility and to explain them thoroughly.

Attention is specially called to the solution of Simultaneous Quadratic Equations, and of Equations of Higher Degrees than the Second, which may be reduced to the quadratic form, and then solved by the methods of solving quadratics.

## 2. COURSES OF STUDY.

Six distinct courses of study are included in the schedule which follows:

- I. A COURSE IN AGRICULTURE.
- II. A COURSE IN CIVIL ENGINEERING AND MECHANICS.
- III. A COURSE IN CHEMISTRY.
- IV. A COURSE IN ELECTRICITY.
- V. A COURSE IN BIOLOGY.
- VI. A WINTER LECTURE COURSE IN AGRICULTURE.

During the first year the studies of the five full courses are nearly the same, and are designed to furnish a suitable introduction to the pursuit of the higher branches in either.

At the end of the first year students elect to pursue one of the five full courses, and for the remaining three years

their studies are directed with particular reference to the choice made. Some studies which go to the equipment of the intelligent citizen, whatever his occupation, such as History, English Literature, Political Economy, Political Ethics and others, are interspersed throughout the entire four years, in order that students may not only acquire a thorough preparation for their special pursuits in life, but may at the same time receive a liberal training which will fit them to discharge wisely and usefully the duties of good citizenship.

## FRESHMAN CLASS.

*Uniform Schedule for all Courses.*

*The Arabic numerals in light-faced type indicate the number of morning hours each week; those in bold-faced type the number of afternoon hours. Exercises throughout the year in Composition, Declamation and Extempore Speaking. Bible Class and Sermon each Sunday morning. Drill twice a week.*

## FIRST TERM, THIRTEEN WEEKS.

## Hours a week.

1. FRENCH.—Whitney's Practical French Grammar, Part I.....	5
2. MATHEMATICS.—Algebra, completed, Bowser; Geometry, Bowser.....	5
3. PHYSIOLOGY.....	2
4. RHETORIC.—Kellogg; Lectures.....	2
5. ENGLISH LITERATURE.—History of the Language, Meiklejohn.....	1
6. CIVICS.....	1
7. DRAFTING.—Practice in use of Instruments; Geometrical Problems and Applications.....	4

## SECOND TERM, THIRTEEN WEEKS.

1. FRENCH.—Keetel's Analytical French Reader; Grammar, Part II .....	5
2. MATHEMATICS.—Geometry completed; Trigonometry, Plane and Spherical, Bowser.....	5
3. ZOOLOGY .....	2
4. ENGLISH LITERATURE.—English Language; Meiklejohn.....	4
5. DRAFTING.—Plain and Colored Topography.....	4

## THIRD TERM, TEN WEEKS.

1. FRENCH.—Classic Authors.....	5
2. MATHEMATICS.—Surveying, Murray.....	5
3. BOTANY.—Gray's; Lectures.....	2
4. ENGLISH LITERATURE.—English Authors.....	4
5. DRAFTING.—Mapping, with Sections, etc.; Field Work .....	4

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Agriculture, Course in  
Chemistry, and Course in Biology.*

## FIRST TERM.

Hours a week.

1. EXPERIMENTAL CHEMISTRY.—Ramsen (first two months).....	} 5
2. BLOWPIPE ANALYSIS.—Nason; Lectures (last month of term).....	
3. CHEMISTRY.—Richter; Lectures, with Experiments.....	4
4. PHYSICS.—Ganot; Lectures.....	3
5. GERMAN.—Whitney's Brief German Grammar.....	3
6. ENGLISH LITERATURE.—English Authors .....	1
7. CHEMICAL LABORATORY PRACTICE.—Experimental Chemistry and Blowpipe Analysis.....	9
8. DRAUGHTING.—Practical Geometry, solid.....	2

## SECOND TERM.

1. QUALITATIVE ANALYSIS.—Fresenius; Lectures.....	5
2. CHEMISTRY.—Richter; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures .....	3
4. GERMAN.—German Reader.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9
7. DRAUGHTING.—Free-Hand Drawing; Intersection and Development of Surfaces.....	2

## THIRD TERM.

1. QUALITATIVE ANALYSIS.—Fresenius; Lectures.....	5
2. CHEMISTRY.—Agricultural Chemistry.—Lectures, with Experiments..	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9
7. DRAUGHTING.—Shades and Shadows; Linear Perspective, etc.....	2

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Civil Engineering and  
Mechanics and Course in Electricity*

## FIRST TERM.

Hours a week.

1. DESCRIPTIVE GEOMETRY.—Church.....	5
2. CHEMISTRY.—Richter; Lectures, with Experiments.....	4
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—Whitney's Brief German Grammar.....	3
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Practical Geometry, Solid.....	4

## SECOND TERM.

1. DESCRIPTIVE GEOMETRY.—Church, completed.....	} 5
2. ANALYTIC GEOMETRY.—Bowser.....	
3. CHEMISTRY.—Richter; Lectures, with Experiments.....	3
4. PHYSICS.—Ganot; Lectures.....	3
5. GERMAN.—German Reader.....	4
6. ENGLISH LITERATURE.—English Authors.....	1
7. DRAUGHTING.—Free-Hand Drawing; Intersection and Development of Surfaces, etc.....	4

## THIRD TERM.

1. ANALYTIC GEOMETRY.—Bowser, completed.....	5
2. CHEMISTRY.—Agricultural Chemistry; Lectures, with Experiments...	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Shades and Shadows; Linear Perspective, etc.....	4

## JUNIOR CLASS.

*Schedule for Course in Agriculture.*

FIRST TERM.		Hours a week.
1. AGRICULTURE.—Farm Economy.....	3+3	
2. INVERTEBRATE ZOOLOGY.....	2	
3. ELEMENTS OF MECHANISM.....	2	
4. MENTAL PHILOSOPHY —Porter's Elements of Intellectual Philosophy..	2	
5. HISTORY.—Freeman.....	5	
6. MILITARY SCIENCE.....	1	
7. BIOLOGICAL LABORATORY PRACTICE.....	9	
SECOND TERM.		
1. AGRICULTURE.—Manures and Fertilizers.....	3	
2. ANATOMY OF DOMESTIC ANIMALS; VEGETABLE HISTOLOGY.....	2	
3. MINERALOGY.—Lectures.....	2	
4. MENTAL PHILOSOPHY AND LOGIC.....	2	
5. HISTORY.—Freeman.....	3	
6. ASTRONOMY.—Young's Elements.....	3	
7. BIOLOGICAL LABORATORY PRACTICE.....	6	
THIRD TERM.		
1. VEGETABLE PHYSIOLOGY.....	3	
2. ENTOMOLOGY.—Structure of Insects.....	5+6	
3. HISTORY OF CIVILIZATION.—Guizot.....	5	
4. MILITARY SCIENCE.....	2	
5. BOTANICAL LABORATORY PRACTICE.....	6	

## SENIOR CLASS.

FIRST TERM.		
1. AGRICULTURE.—Feeding Animals.....	4	
2. ENTOMOLOGY.—Systematic.....	3+6	
3. OSTEOLOGY AND EMBRYOLOGY.....	3	
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
5. GEOLOGY.—Geikie.....	2	
6. BIOLOGICAL LABORATORY PRACTICE.....	6	
SECOND TERM.		
1. AGRICULTURE.....	5	
2. AGRICULTURAL ZOOLOGY.....	2	
3. BOTANY.—Cryptogamic.....	2	
4. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	
5. GEOLOGY.—Geikie.....	2	
6. MILITARY SCIENCE.....	1	
7. BIOLOGICAL LABORATORY PRACTICE.....	6	
8. BOTANICAL LABORATORY PRACTICE.....	6	
THIRD TERM.		
1. AGRICULTURE.....	3	
2. ECONOMIC ENTOMOLOGY.....	4+6	
3. VEGETABLE PATHOLOGY.....	2+6	
4. INTERNATIONAL LAW.....	4	
5. PRACTICAL ETHICS.—Hopkins.....	2	
6. THESIS.....	...	



## JUNIOR CLASS

*Schedule for Course in Civil Engineering and Mechanics.*

FIRST TERM.		Hours a week.
1. DIFFERENTIAL CALCULUS.—Bowser.....	5	
2. ELEMENTS OF MECHANISM.....	2	
3. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy..	2	
4. HISTORY.—Freeman.....	5	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING.—Lettering, etc.....	4	

SECOND TERM.		
1. DIFFERENTIAL CALCULUS.—Completed; Integral Calculus, Bowser....	5	
2. MINERALOGY.—Lectures.....	2	
3. MENTAL PHILOSOPHY AND LOGIC.....	2	
4. HISTORY.—Freeman.....	3	
5. ASTRONOMY —Young's Elements.....	3	
6. DRAUGHTING.—India Ink and Color Shading, etc.....	4	

THIRD TERM.		
1. INTEGRAL CALCULUS —Completed.....	5	
2. RAILROAD CURVES —Henck's Field Book.....	3	
3. HISTORY OF CIVILIZATION.—Guizot.....	5	
4. MILITARY SCIENCE.....	2	
5. DRAUGHTING.—Copying, Tracing, Blue-Print Copying, Railroad Profiles and Cross-Sections; Field Work.....	4	

## SENIOR CLASS.

FIRST TERM.		
1. MECHANICS.—Bowser.....	5	
2. ENGINEERING.—Mahan.....	4	
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
4. GEOLOGY.—Geikie.....	2	
5. DRAUGHTING.—Machinery and Architecture.....	4	

SECOND TERM.		
1. MECHANICS.—Bowser.....	5	
2. BRIDGE-BUILDING.—Wood.....	4	
3. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	
4. GEOLOGY.—Geikie.....	2	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING.—Graphical Statics as Applied to Bridges, etc.....	4	

THIRD TERM.		
1. HYDROMECHANICS.—Bowser.....	5	
2. GEODESY.—Lectures.....	4	
3. INTERNATIONAL LAW.....	4	
4. PRACTICAL ETHICS.—Hopkins.....	2	
5. DRAUGHTING.—Thesis.....	...	

## JUNIOR CLASS.

*Schedule for Course in Chemistry.*

FIRST TERM.		Hours a week.
1. QUANTITATIVE ANALYSIS.—Presenius, Cairns; Lectures .....	2	
2. STOICHIOMETRY—Foye; Lectures.....	3	
3. ELEMENTS OF MECHANISM.....	2	
4. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy..	2	
5. HISTORY.—Freeman.....	5	
6. MILITARY SCIENCE.....	1	
7. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	
SECOND TERM.		
1. ORGANIC CHEMISTRY.—Remsen; Lectures.....	4	
2. MINERALOGY.—Lectures and Crystallography.....	3	
3. MENTAL PHILOSOPHY AND LOGIC.....	2	
4. HISTORY.—Freeman.....	3	
5. ASTRONOMY.—Young's Elements .....	3	
6. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	
THIRD TERM.		
1. ORGANIC CHEMISTRY.—Remsen; Lectures.....	3	
2. DETERMINATIVE MINERALOGY.....	5	
3. HISTORY OF CIVILIZATION.—Guizot.....	5	
4. MILITARY SCIENCE.....	2	
5. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	

## SENIOR CLASS.

FIRST TERM.	
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	3
2. PHYSICAL CHEMISTRY.—Lectures.....	5
3. REPORTS.—Recent Chemical Literature.....	1
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4
5. GEOLOGY.—Geike.....	2
6. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry..	11
SECOND TERM.	
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	4
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures.....	4
3. REPORTS.—Recent Chemical Literature.....	1
4. CONSTITUTIONAL LAW.—Cooley; Essays.....	4
5. GEOLOGY.—Geikie.....	2
6. MILITARY SCIENCE .....	1
7. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry..	11
THIRD TERM.	
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	3
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures.....	5
3. REPORTS.—Recent Chemical Literature.....	1
4. INTERNATIONAL LAW .....	4
5. PRACTICAL ETHICS.—Hopkins.....	2
6. THESIS.....	2
7. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry..	11

## JUNIOR CLASS.

*Schedule for Course in Electricity.*

FIRST TERM.		Hours a week.
1. DIFFERENTIAL CALCULUS.—Bowser.....	5	
2. ELEMENTS OF MECHANISM.....	2	
3. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy..	2	
4. HISTORY.—Freeman.....	5	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING.—Lettering, etc.....	4	
7. PHYSICAL LABORATORY.—Elements of Mechanics.....	3	
SECOND TERM.		
1. DIFFERENTIAL CALCULUS.—Completed ; Integral Calculus, Bowser.....	5	
2. MINERALOGY.—Lectures.....	2	
3. MENTAL PHILOSOPHY AND LOGIC.....	2	
4. HISTORY.—Freeman.....	3	
5. ASTRONOMY.—Young's Elements.....	3	
6. DRAUGHTING.—India Ink and Color Shading, etc.....	4	
7. PHYSICAL LABORATORY.—Construction and Repair of Apparatus.....	3	
THIRD TERM.		
1. INTEGRAL CALCULUS.—Completed.....	5	
2. PHYSICS.....	3	
3. HISTORY OF CIVILIZATION.—Guizot.....	5	
4. MILITARY SCIENCE.....	2	
5. DRAUGHTING.—Construction, Copying, Tracing, Blue-Print Copying...	4	
6. PHYSICAL LABORATORY.—Testing.....	3	

## SENIOR CLASS.

FIRST TERM.		
1. MECHANICS.—Bowser.....	5	
2. PRACTICAL ELECTRICITY.....	4	
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
4. GEOLOGY.—Geikie.....	2	
5. DRAUGHTING.—Machinery and Architecture.....	4	
6. PHYSICAL LABORATORY.—Testing.....	3	
SECOND TERM.		
1. MECHANICS.—Bowser.....	5	
2. THEORY OF ELECTRICITY.....	4	
3. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	
4. GEOLOGY.—Geikie.....	2	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING.—Graphical Statics, with Applications.....	4	
7. PHYSICAL LABORATORY.—Testing.....	3	
THIRD TERM.		
1. HYDROMECHANICS.—Bowser.....	5	
2. THEORY OF ELECTRICITY.....	4	
3. INTERNATIONAL LAW.....	4	
4. PRACTICAL ETHICS.—Hopkins.....	2	
5. PHYSICAL LABORATORY.—Testing.....	3	
6. DRAUGHTING.—Thesis.....	2	

## JUNIOR CLASS.

*Schedule for Course in Biology.*

	FIRST TERM.	Hours a week.
1. INVERTEBRATE BIOLOGY.....	5	
2. ELEMENTS OF MECHANISM.....	2	
3. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy..	2	
4. HISTORY.—Freeman.....	5	
5. MILITARY SCIENCE.....	1	
6. BIOLOGICAL LABORATORY PRACTICE.....	9	
SECOND TERM.		
1. VEGETABLE BIOLOGY; VERTEBRATE BIOLOGY.....	5	
2. MINERALOGY.—Lectures.....	2	
3. MENTAL PHILOSOPHY AND LOGIC.....	2	
4. HISTORY.—Freeman.....	3	
5. ASTRONOMY.—Young's Elements.....	3	
6. BIOLOGICAL LABORATORY PRACTICE.....	12	
THIRD TERM.		
1. EXTERNAL ANATOMY OF INSECTS; SYSTEMATIC ENTOMOLOGY; CRYPTO- GAMIC BOTANY.....	8	
2. HISTORY OF CIVILIZATION.—Guizot.....	5	
3. MILITARY SCIENCE.....	2	
4. BIOLOGICAL LABORATORY PRACTICE.....	12	

## SENIOR CLASS.

	FIRST TERM.	
1. SYSTEMATIC ENTOMOLOGY; OSTEOLOGY AND EMBRYOLOGY.....	9	
2. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
3. GEOLOGY—Geikie.....	2	
4. BIOLOGICAL LABORATORY PRACTICE.....	12	
SECOND TERM.		
1. VEGETABLE PATHOLOGY; COMPARATIVE ANATOMY AND HISTOLOGY..	9	
2. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	
3. GEOLOGY—Geikie.....	2	
4. MILITARY SCIENCE.....	1	
5. BIOLOGICAL LABORATORY PRACTICE.....	12	
THIRD TERM.		
1. INTERNAL ANATOMY OF INSECTS; ECONOMIC ENTOMOLOGY; ECONOMIC BOTANY.....	9	
2. INTERNATIONAL LAW.....	4	
3. PRACTICAL ETHICS.—Hopkins.....	2	
4. BIOLOGICAL LABORATORY PRACTICE.....	12	
5. THESIS.....	12	

## COURSE IN AGRICULTURE.

The object of this course is to provide a broad scientific training, which is now recognized as essential to the best life on the farm.

The major studies of this course include Applied Agriculture, Biology, Botany and Entomology.

**AGRICULTURE.**—In the first term, Junior year, the student is instructed in business methods, relations of weather to farming, the characteristics of the different breeds of farm animals, their care and management, and their adaptability to the various purposes and conditions, and their general economic relations.

The study of the principles of scientific agriculture and their application to the different lines of farm practice, is continued throughout both the Junior and Senior years. The elements contained in the atmosphere and soil being the basis of all vegetable and animal life, the student is instructed in the transformations which take place in these elements in the production of crops, in the growth of animals, and in the principles which govern their conversion into products of the highest economic value.

While suitable text-books are used, the instruction, in both the principles and their application, is imparted mainly by lectures.

For those unable to take the full Agricultural Course, provision has been made for College instruction by means of the Winter Lecture Course, and of the College Extension system.

**ANIMAL BIOLOGY.**—In the Freshman year the students in Agriculture pursue Physiology and Zoology two hours per week, the first two terms, reciting with the other students of the Scientific School.

In the Junior and Senior years, Fall and Winter terms, students in Agriculture devote two morning hours and two afternoons per week to General Biology, as follows: General Biology of Plants, first half Fall term, Junior year; Invertebrate Zoology, second half of same term; Vertebrate Zoology, Winter term.

Comparative Osteology and Comparative Embryology, in the Fall term, Senior year; Comparative Anatomy of the Domesticated Animals and Economic Zoology in the Winter term.

For further details see the fuller description of these courses under the Course in Biology. While students in Agriculture devote less time to biological subjects than is required of regular students in Biology, the portions of the work to which they give attention are chosen with especial reference to their needs. The study of the anatomy of domestic animals is furthered by demonstrations from a fine Auzoux model of the horse.

**BOTANY.**—For Freshman work in Botany, see page 44.

In the second term of the Junior year, the students examine with the compound microscope the minute structure of the leaves, stems, roots, flowers and seeds of various plants. The accompanying class-room exercises consist of recitations upon, and elaborations of the work pursued in the laboratory.

During the third term the microscopic study of plants is continued, time being taken for making an herbarium of fifty species of flowering plants, named and neatly mounted.

In the second term of the Senior year a course of lectures is given upon vegetable physiology, and laboratory exercises are continued with ferns, mosses, lichens, algæ, etc. During the third term special attention is given to the various kinds of parasitic fungi, including rusts, mildews, moulds and blights so destructive to crops.

ENTOMOLOGY.—In the third term of the Junior year Entomology will be taught by lectures and laboratory work, and the course will be continued for two terms in the Senior year. The student will be given a knowledge of the structure of insects sufficient to enable him readily to recognize the injurious and beneficial forms, and will be grounded in the anatomy and physiology sufficient to guide him in the practical work of dealing with the injurious species. Attention will be paid to the habits and transformations of the species, and throughout the course, while scientific accuracy will be insisted on, the practical bearing of the subject will be kept steadily in view.

#### COURSE IN CIVIL ENGINEERING AND MECHANICS.

During the last three years, the students in this course are instructed in Descriptive Geometry, Analytic Geometry, Railroad Curves, Differential and Integral Calculus, Analytic Mechanics, Hydromechanics, Civil Engineering, Bridge-Building and Geodesy, and have practice two

afternoons a week in Draughting, with Exercises and Problems in Geometrical Constructions, in Descriptive Geometry, Topographical, Mechanical and Architectural Drawing and in Graphical Statics.

Students in this course, and in the Chemical and Agricultural Course, in addition to the special and technical studies of their course, pursue such studies in English, Rhetoric, Elocution, French, German, Metaphysics, Moral Philosophy, the Duties of Citizenship and the Natural Sciences as are calculated to make them broadly educated and intelligent citizens, and not mere narrow specialists.

#### COURSE IN CHEMISTRY.

During the last three years, students in this course are instructed in General, Experimental and Agricultural Chemistry, Crystallography, Blowpipe Analysis, Determinative Mineralogy, Analytical, Organic, Applied and Theoretical Chemistry.

The course of study depends, to some extent, upon the student's future pursuit in life.

**EXPERIMENTAL CHEMISTRY** is taught in the recitation-room by carefully conducted quizzes and full work in the laboratory. The student's first and general knowledge of chemistry is obtained by his own observation.

**BLOWPIPE ANALYSIS** comprises the study of the various reactions and the analysis of a number of substances. The laboratory work is accompanied with constant quizzing in the recitation-room.



GENERAL CHEMISTRY is taught from a text-book fully illustrated by experimental lectures, during two terms of the Sophomore year. An endeavor is made to make the student understand the sure basis of fact on which the science of Chemistry rests, and to reason for himself from these facts. He is also taught to make a careful distinction between facts and theories, and not to confound that which is proved with that which is merely speculative.

A course in AGRICULTURAL CHEMISTRY is given in the third term of the Sophomore year, showing the relation of Chemistry to Agriculture, in which the students are required to take full notes, which are examined and corrected by the instructor, and from which the recitations are to be made. The lectures are illustrated by experiment, and specimens of the various objects of study are exhibited.

ANALYTICAL CHEMISTRY.—The chief object of a scientific course is to teach how to study nature, how to put questions, how to interpret the answers. So the student commences with experiments on bodies of known composition, performing those experiments that characterize common, simple substances, until he is perfectly familiar with the reactions, both theoretically and experimentally, the theoretical part being considered in the class-room. Then complicated bodies are examined, until most difficult substances are readily analyzed, and the student is ready for—

QUANTITATIVE ANALYSIS, which is taught in a similar way. The student first analyzes substances of known composition until perfectly familiar with the peculiar manipulation in this subject. Then he proceeds to substances of unknown composition. Through one College year, instruction is given with recitations and questionings during the first term.

At the end of the year, the student has gained a knowledge of Analytical Chemistry sufficient for all ordinary purposes, and therefore, in the Senior year, he can profitably take up such special branches as may seem best for him.

STOICHIOMETRY, the mathematics of chemistry, is taught by lecture, recitation and blackboard drill. During the course, a large number of problems are given for solution, special attention being paid to those occurring in technical work.

ORGANIC CHEMISTRY is taught by lectures, recitations and laboratory work. As the various substances are considered, their relations to vegetable and animal life and to agriculture are pointed out. Attention is also given to their practical application, as in food, medicines, dyeing and in manufactures generally. The lectures are accompanied by full experimental illustrations.

APPLIED CHEMISTRY.—The applications of Chemistry to the arts and manufactures are taught by lectures and text-book. Whenever it is practicable, the actual products are exhibited to the students, and the manufacturing pro-

cesses reproduced in miniature. Attention is drawn to the scientific relations and connections between the various manufactures. The great losses by imperfect methods of manufacture and by waste products are pointed out, and the student is taught to see the true economy of production. Illustrative of the lectures, visits are made to various manufacturing establishments, of which there are a number in and about New Brunswick, and an opportunity is given to see manufacturing operations in actual working.

PRINCIPLES AND THEORIES of Chemistry having recently developed in a very remarkable way, form a most important branch of Chemistry. Accordingly, the subject extends throughout the Senior year. The instruction begins with a discussion of the atomic weights and the general chemical properties of gases. Then liquids and solids are considered from a chemical point of view, particular attention being paid to chemical action in solution. The course is so arranged that at its end the student will have a clear idea of modern chemical thought.

Owing to the exceedingly careful observations required, few experiments can be performed in the class-room, but the student will be encouraged to become more familiar with the subject by experiments at his desk. After finishing experimental organic chemistry, the student takes up work for his thesis chosen by him, but subject to the approval of the instructor.

MINERALOGY is taught in the Junior year. In the second term there is a course of lectures in Descriptive

Mineralogy, in which the general characters of minerals are discussed, and some of the most important species are carefully studied. Special attention is paid to CRYSTALLOGRAPHY, as being one of the most distinguishing characteristics, and therefore much used in Determinative Mineralogy, which occupies the third term. In this part of the course the student learns to make the tests by which minerals are distinguished from each other, and becomes familiar with their differences by actual handling and comparison. In this course use is made of the College collections, supplemented by the private collection of the Professor in charge.

#### COURSE IN ELECTRICITY.

This course is nearly the same as that in Engineering, Physical Laboratory practice being substituted for Railroad Curves, Bridge-Building and Geodesy, and for part of the afternoon work in Draughting. This preparation enables graduates to take such positions as do not demand the full mechanical and mathematical equipment of a professional electrical engineer. And those who intend to pursue Electrical Engineering after graduation are furnished with the necessary practical basis. Manual skill and preference for mechanical details are prime requisites for electrical pursuits, hence, those who enter the course will be required to do the most exact work possible, and expected to show cheerful patience in tedious manipulations.

The Physical Laboratory is provided with engines, motors, testing apparatus, and all that is required for a satisfactory study of the essentials of Electrical Science.

## COURSE IN BIOLOGY.

The distinctive studies of this course fall under three departments, Animal Biology, Botany and Entomology, the time being nearly equally divided among the three as follows: Freshman year, Biology, first and second terms; Botany, third term, two hours per week. This work is required of all students. The elective work begins in the Junior year, Fall term, with Biology, five hours and three afternoons; Winter term, Biology and Botany, five hours and four afternoons; Spring term, Botany and Entomology, seven hours and three afternoons. In the Senior year, Fall term, Biology and Entomology; Winter term, Biology and Botany; Spring term, Botany and Entomology, nine hours and four afternoons throughout the year. Students in Agriculture, and Classical elective students, are required to follow this course; although fewer hours are given, there is a special selection of those subjects most important.

This course is especially recommended to students contemplating the study of medicine.

I. DEPARTMENT OF ANIMAL BIOLOGY.—Here are recognized the following sub-heads:

(a) *Human Anatomy, Physiology and Hygiene*.—Fall term, Freshman year. The instruction is by means of lectures and quizzes.

Students applying for advanced standing should offer satisfactory evidence of the mastery of such a text-book as Martin's "The Human Body," Briefer Course, or its equiv-

alent. The aim of these lectures is to make the student realize that the laws of Human Biology have their roots, and find their explanation in the laws disclosed by a study of lower forms of life. The plan of instruction early in the term is parallel to that pursued in General Biology. The work is supplemented by demonstrations of specimens, dissections, charts and models. A fine Auzoux model of the human body, having nearly a hundred separable parts, newly added to the equipment of the Biological Department, enhances the value of this course.

(b) *General Zoology*.—Winter term, Freshman year. It is intended under this heading to include not only such a preliminary survey of the various groups of animals and their mutual affinities as shall prepare the student for the study of Historical Geology, but also to present the facts of Comparative Anatomy, comparing the structure of man with that of the other vertebrates. The work is, to a large extent, a direct continuation of that given in the first term, and covers subjects not given in any one elementary textbook, but students applying for advanced standing must offer satisfactory evidence of the mastery of such a book as Orton's "Comparative Zoology" or its equivalent. Demonstrations from Auzoux models of the Leech, Snail, Perch, Serpent and Fowl, as well as actual dissections, supplement and illustrate the work.

(c) *General Biology*.—This covers the elective portion of the work in the Biological Department. The method of instruction is by microscopical study, dissection, experi-

ment, and investigations pursued by the student under the guidance of the Professor. The student is required to make drawings and written descriptions of the objects studied. The work of the Freshman year is assumed as preparatory, and such additional lectures are given as are needed. Each student should provide himself with a small case of dissecting instruments and with Parker's "Lessons in Elementary Biology." The other apparatus, material and the microscopes are furnished by the laboratory, for which a fee is required.

The course aims to give a general rather than a special education, but is a fitting introduction to any of the branches of Biology which a student may desire to study later. The following subjects are pursued in the order mentioned :

1. *General Biology of Plants*.—First half, Fall term, Junior year. Topics: Fermentation (Yeast), Fungi (*Mucor*, *Penicillium*), Bacteria, Algæ (*Pleurococcus*, *Hæmatococcus*, *Spirogyra*), Chara, Moss, Fern, Alternation of Generations in Higher Plants.

2. *Biology of Invertebrated Animals*.—Second half of Fall term, Junior year. Topics: Protozoa (*Amœba*, *Vorticella*, etc.), Cœlenterates (*Hydra*, Hydroids, Sponges), Echinoderms (Starfish), Vermes (Earthworm, etc.), Molluscs (Oyster, Clam, Snail), Arthropoda (Lobster).

3. *Biology of Vertebrates*.—Winter term, Junior year. Topics: Fish, Frog, Turtle, Pigeon, Mammal (Cat or Dog).

4. *Embryology*.—Fall term, Senior year. The subject of Comparative Embryology is introduced by a practical study of the development of the hen's egg, artificial incubation being used. This course is intended, also, to supplement the work on Invertebrate Biology of the Junior year.

5. *Osteology*.—Fall term, Senior year. The subject of Comparative Osteology is introduced by a detailed study of the skeletons of the domesticated animals.

6. *Comparative Anatomy*.—Winter term, Senior year. Vertebrate Anatomy, introduced by the careful dissection of a mammal, is now offered as supplementing the Vertebrate Biology of the previous year.

7. *Histology*.—Winter term, Senior year. In connection with the careful dissection of a mammal, the histological and technical training previously gained is now greatly extended by a special microscopical study of sections of the various organs.

8. *Economic Zoology*.—Winter term, Senior year. The principles previously acquired are now applied to practical questions, and such topics as the Laws of Heredity and of Stock-Breeding are discussed in a way to show how abstract truths can be subjected to economic application. These lectures also form the concluding ones of the Winter Course in Agriculture of the Biological Department.



II. BOTANY.—The study of Botany, two hours per week, begins in the third term of the Freshman year, and the ground covered is embraced by "Gray's Revised Lessons." In connection with the text-book work, each student makes drawings and descriptions of leaves, stems, roots and other parts of plants. This is followed by a thorough study of the flower from living specimens gathered in the field. The terms used in Descriptive Botany are dwelt upon so that each member of the class becomes familiar with the methods of determining the botanical names of plants, and acquaints himself with the relationships of genera and orders.

Laboratory study in Botany begins in the second term of the Junior year, and students then pursue a course in vegetable anatomy with the compound microscope, in which they are introduced to the various kinds of tissues and tissue systems as illustrated in the leaves, stems and roots of the higher plants. In the third term, laboratory practice is continued with the histology of the organs of reproduction, and the collecting of plants in the field begun. Each student prepares an herbarium of at least fifty species, all neatly mounted and fully labeled.

The Seniors, in their second term, have a course of lectures upon Vegetable Physiology, special attention being paid to the origin of varieties through cross-fertilization and other causes. In the laboratory, each member of the class becomes familiar, microscopically, with the histology of cryptogams, particularly those best enforcing the principles in Physiology considered in the class-room. The third term is specially devoted to a consideration of those

low organisms that are so obscurely known under the general term of the fungous diseases of plants, and embracing one branch of Economic Botany, now called Vegetable Pathology.

III. ENTOMOLOGY.—In the third term of the Junior year Entomology will be taught by lectures and laboratory work, and the course will be continued for two terms in the Senior year. The student will be given a knowledge of the structure of insects sufficient to enable him readily to recognize the injurious and beneficial forms, and will be grounded in the anatomy and physiology sufficient to guide him in the practical work of dealing with the injurious species. Attention will be paid to the habits and transformations of the species, and throughout the course, while scientific accuracy will be insisted on, the practical bearing of the subject will be kept steadily in view.

WINTER LECTURE COURSE IN AGRICULTURE.

JANUARY 11-FEBRUARY 19, 1892.

The New Jersey State Agricultural College has established a six weeks' Lecture Course in Agriculture, which is designed to teach those general principles which underlie reasonable farm practice, and their adaptation to the various lines of farming. The course, while primarily intended for farmers' sons, will also be open to such farmers of the State as may desire to attend. In the preparation of the course it has been the aim of the College to make the instruction scientific in its character, but of such a nature as to be directly applicable to the every-day work of the farm. It will embrace the following subjects:

## AGRICULTURE.

TWENTY LECTURES, BY PROFESSOR EDWARD B. VOORHEES.

Soils—their character and preparation for crops. Rotation of Crops. The Culture of Forage Plants. Systems of Soiling. Farm-yard Manures—their preparation and use. Commercial Fertilizers, including the Sources and Composition of Nitrogenous Materials, Phosphates, Potassium Compounds, Lime, etc. Farm Stock. Methods of Feeding and Study of Foods. Dairying.

## BOTANY AND HORTICULTURE.

TWENTY LECTURES, BY PROFESSOR BYRON D. HALSTED.

Plant Life in General. The Seed—its structure and uses. Germination of Seeds. Buds—kinds and their development. Leaves—structure and uses. Stems—kinds, formation and uses. Roots—methods of growth and functions. Flowers—the various parts and their uses. Fertilization, Crossing, Origin of New Sorts, etc. Fruits—kinds, structure and uses. The Microscopic Structure of Plants—cells and their growth. Kinds of Plants—their relationships and classifications. Determination of Botanical Names of Plants. Ferns, Mosses and other low forms. Fungous Diseases of Cultivated Crops, as the Rusts and Smuts of Grains, Mildew of Grape and Gooseberry, Blight of Pear and Potato, etc. Practical remedies will be given and the methods for their application.

## ENTOMOLOGY.

TWENTY LECTURES, BY PROFESSOR JOHN B. SMITH,

In which will be given the outlines of Insect Structure, the characters used in classification, their habits and transformations and the methods of distinguishing those that are beneficial from those that are injurious. The philosophy of preventive and remedial measures to avoid insect injury will be taught, and the mechanical devices for the application of insecticides will be practically explained. The most injurious species in each order will be taken up separately, and the methods of dealing with them will be given. In the whole series the needs of the practical agriculturist only will be considered.

## BIOLOGY.

TWENTY LECTURES, BY PROFESSOR JULIUS NELSON.

The Skeletons of the Cat, Dog, Pig, Sheep, Ox, Horse and Fowl, compared. Muscular Energy and Foods. Digestion, Blood and Circulation. Germ Diseases. Respiration and Excretion. The Nervous System and Sensation. Reproduction and Development. The Laws of Heredity and Stock-Breeding. Economic Relations of Animals. The Lectures will be supplemented by Demonstrations from Auzoux Models of the Horse and the Turkey, and also Microscopical Preparations and Charts.

## PHYSICS.

FIVE LECTURES, BY PROFESSOR F. C. VAN DYCK.

Illustrating the application of Physics in agricultural relations, water-supply, farm implements, ventilation and lighting of buildings, farm motors, etc.

MECHANICS.

FIVE LECTURES, BY PROFESSOR ALFRED A. TITSWORTH.

On the construction of farm roads, bridges, buildings, etc.

CHEMISTRY.

LECTURES, BY PROFESSOR ALBERT H. CHESTER.

On the elementary principles of agricultural chemistry.

REQUIREMENTS AND EXPENSES.

No entrance examination will be required. All applicants should be at least sixteen years of age and have a common-school education.

Board, with furnished room, can be obtained in New Brunswick for \$4.50 to \$6 per week; board without rooms for \$3.50 to \$4.50 per week.

A few text-books may be desirable but none will be required.

The course will open Monday, January 11th, 1892, and close Friday, February 19th. The lectures will be given during afternoon hours, beginning at 2 P. M.

MILITARY DEPARTMENT.

This department is in charge of the Professor of Military Science and Tactics, an officer of the regular army, detailed by the War Department for the purpose.

Instruction is both practical and theoretical.

PRACTICAL.—The student, on entering College, is drilled in the School of the Soldier, including bayonet exercise,

and is advanced, successively, to the Schools of the Company and Battalion.

Considerable attention is given to target practice, the College being supplied with latest-model Springfield rifles and a liberal supply of rifle ammunition.

**THEORETICAL.**—During the Junior and Senior years, elementary instruction, by means of lectures and recitations, is given in the Art and Science of War, Modern Tactics, Modern Small Arms and Cannon, Explosives, Military Correspondence and Reports, Care of Troops in the Field, Military and Martial Law and other military subjects.

**UNIFORM.**—A uniform consisting of cap, blouse and trousers of dark-blue cloth, has been adopted, the cost of which is about \$13, or considerably less than that of a good suit of civilian's clothes. The entire suit is neat and serviceable, and, while required to be worn at drills, may be worn on any occasion.

**MILITARY DRILL** is required of all students in the Scientific Department, except as they may be excused by reason of conscientious scruples, physical disability or some similarly valid reason.

The object of instruction in this department is not only to comply with the requirements of the laws of Congress for the State Colleges organized under the Act of July 2d, 1862, but also to improve the health and physique of

students, and to give that elementary military knowledge which every citizen should possess, that he may render intelligent and effective aid to his country or State in case of war or riots.

ANNUAL REPORT OF THE SCIENTIFIC DEPARTMENT.

More extended information as to the studies and courses in the Scientific School will be found in the Annual Report of the New Jersey State Scientific School to the Legislature of New Jersey, which will be sent to any address on application.

### 3. ORGANIZATION.

Rutgers Scientific School has been designated by the Legislature of New Jersey, in accordance with the law of Congress of July 2d, 1862,

THE STATE COLLEGE FOR THE BENEFIT OF AGRICULTURE  
AND THE MECHANIC ARTS.

FREE SCHOLARSHIPS.

Under the law, a certain number of students from the State of New Jersey are received into this department of the College, and educated free of expense for tuition. This law also provides for the appointment by the Governor of a Board of Visitors, two from each Congressional District, who possess general powers of supervision and control. The State pupils are admitted to free scholarships on the recommendation of the Superintendent of Schools in each

county, and on passing the required examinations. These free scholarships are distributed among the counties in proportion to their population, as follows :

## STATE SCHOLARSHIPS.

ATLANTIC, . . . . .	1	MIDDLESEX, . . . . .	2
BERGEN, . . . . .	1	MONMOUTH, . . . . .	2
BURLINGTON, . . . . .	3	MORRIS, . . . . .	2
CAMDEN, . . . . .	2	OCEAN, . . . . .	1
CAPE MAY, . . . . .	1	PASSAIC, . . . . .	2
CUMBERLAND, . . . . .	1	SALEM, . . . . .	1
ESSEX, . . . . .	6	SOMERSET, . . . . .	1
GLOUCESTER, . . . . .	1	SUSSEX, . . . . .	1
HUDSON, . . . . .	6	UNION, . . . . .	2
HUNTERDON, . . . . .	1	WARREN, . . . . .	1
MERCER, . . . . .	2		<hr/> 40

In June, 1888, the Trustees, to express their appreciation of the action of the Legislature in making the first appropriation yet made to further the work of the State College, voted to give to the young men of New Jersey

## TEN ADDITIONAL FREE SCHOLARSHIPS "AT LARGE."

By a law passed March 31st, 1890, establishing

## A FREE SCHOLARSHIP FOR EACH ASSEMBLY DISTRICT EACH YEAR.

provision is made for affording the advantages of a liberal course of study in the State Agricultural College to the students in the schools in all parts of the State, who shall be selected as follows: "A competitive examination, under the direction of the City Superintendents and the County Superintendent of Education, in each county, shall be



held at the County Court House in each county of the State, upon the first Saturday in June in each year."

The examination will be held on June 4th, 1892, and candidates for Free Scholarships will be examined in the subjects required for admission, as stated on pages 56 and 57.

The law provides that if several properly qualified candidates for appointment pass the examination from the same Assembly District, all who are suitably qualified shall receive appointment to such free scholarships, excess from certain Assembly Districts being counterbalanced by vacancies in other Assembly Districts, provided only that the entire number of appointees shall not exceed the entire number of free scholarships created by the State.

Letters of inquiry to the President, or to Mr. IRVING S. UPSON, Registrar, will receive careful attention.

THE NEW JERSEY STATE AGRICULTURAL COLLEGE  
EXPERIMENT STATION.

By the Act of Congress of March 2d, 1887, a law was passed entitled "An act to establish Agricultural Experiment Stations in connection with the Colleges established in the several States under the provisions of an act approved July 2d, 1862, and of the acts supplementary thereto." This act is commonly known as the "Hatch Act," from the active interest taken in its passage by Hon. William H. Hatch, M.C., of Missouri. It authorizes the appropriation of \$15,000 annually for the support of Agricultural Experiment Stations in connection with the Colleges which were established in the several States "for the

benefit of Agriculture and the Mechanic Arts," by the Congressional Act of July 2d, 1862.

The Legislature of New Jersey, by its acts of March 16th, 1887, and of March 5th, 1888, designated the Trustees of Rutgers College "as the parties to whom all moneys appropriated by Congress under said acts of Congress or supplements thereto shall be paid for the purposes mentioned in said acts of Congress." The department of Rutgers College known as Rutgers Scientific School, is, by law, the State Agricultural College. The Agricultural Experiment Station is established in connection with it.

Already the Station is organized and at work. By the co-operation of the State Experiment Station, a large and well-fitted laboratory has been erected, and is already occupied. Investigators have been appointed upon the insect enemies of plants, upon the food-products of our fresh and salt waters, and their improvement, upon the geology and chemistry of our soils, and the effect of tillage and fertilizers upon them, upon the diseases of plants, and the application of science to the growth of agricultural and horticultural products, and upon the food consumption and the value of the products of the best five breeds of dairy cattle.

While the main business of such a Station is in searching after new truths, and arranging them for practical and economic use, the proper location for it is in connection with an institution of learning. Almost all our investigators are teachers. The investigation and diffusion of knowledge necessarily go hand in hand; and the example of men devoted to the searching for useful truths is stimu-

lating to those who are yet in their preparatory studies, and are aspiring to fill well their places in life.

It is from those now preparing that our future investigators must come, and it is important that they should have those who are now in the field of work directly before them. In this respect it is believed the location of the Station at the College will be most salutary in its influence.

#### EXTENSION DEPARTMENT.

The Trustees, desiring to increase the usefulness of the State College, and to give the benefits of liberal training to the people at large who cannot enter the institution as regularly enrolled students, decided at their last meeting to establish a new department, for extension teaching. Under the auspices of this department, a number of lecture courses will be delivered in various localities in the State of New Jersey during the coming winter, by members of the Faculty and other teachers connected with the College, on Agriculture, the English Language, and the various branches of natural and economic science.

The work will be conducted chiefly on the plan that has proved eminently successful elsewhere, embodying the following features :

1. LECTURES.—Full courses will consist of twelve lectures, delivered generally at weekly intervals, beginning in January or later, as may be arranged with the places desiring them. Shorter courses of six or more lectures will also be furnished if demanded.

2. SYLLABUS AND TEXT-BOOKS.—For every course of lectures a syllabus will be prepared, giving an outline of the subject treated and serving as a brief and condensed text-book. Other books for parallel reading will be introduced as required.

3. THE CONFERENCE HOUR.—To give those who desire the benefit of personal contact with the lecturer, an hour for informal class-work will be held either immediately before or immediately after the lecture, where questions will be asked and answered, and where obscure points may be further elucidated.

4. THE WRITTEN EXERCISES.—To those who attend the conference hour, work will be assigned upon which written papers will be prepared during the week and mailed to the lecturer for correction and criticism.

5. THE EXAMINATION.—At the end of a course the lecturer will hold an examination, open to all, but intended chiefly for those who have taken all the work of lectures, conference hours and written exercises.

6. CERTIFICATE.—To all who, having satisfactorily accomplished the weekly tasks, shall successfully pass this examination, the College will award a formal certificate. This will specify the subject, the date, and the lecturer under whose direction the work has been done.

Full information concerning the courses offered and the lecturers who shall deliver them, the cost of any course,

the methods of local organization, etc., will be furnished on application. Inquiries should be directed to the President, or to Professor LOUIS BEVIER, JR., the Secretary of the Extension Department.

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## EXAMINATIONS.

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The classes in both departments are examined at the close of each term. These examinations are partly oral and partly written, and have an important bearing upon the standing of the student in his class.

Unexpected examinations at irregular intervals are held at the discretion of each instructor. The object of these examinations is to cultivate the habit of considering the relations of each day's work to what has been done before, and to stimulate effort on the part of each student to gain a comprehensive knowledge of the subjects studied.

At the end of the first and third terms, the examinations of the classes of the Scientific Section are held in the presence of the Board of Visitors, who then make their semi-annual visits to the institution.

At the end of the third term, each member of the Graduating Class of the Scientific Section is required to present a thesis on some scientific subject, a copy of which is written out upon paper suitable for binding, and deposited in the College Library.

The final examination of the Graduating Classes is held

four weeks before Commencement, from which time they are subject to such duties as are required for their preparation for Commencement.

Students who receive conditions at the June Examinations must report at College prepared to be examined upon the whole of each of the subjects on which they have conditions, at 10 A. M. on the Tuesday before College opens, in September.

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## GRADUATION.

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To all members of the Graduating Class of the Classical Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Arts.

To all members of the Graduating Class of the Scientific Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Science.

To students, in either Department, who have satisfactorily pursued special courses of study, a certificate is granted stating the studies pursued and the attainments made.

The following regulations have been adopted by the Board of Trustees regarding the graduating exercises at Commencement :

1. The privilege of speaking at Commencement shall be limited to eight men, and shall be open without distinction to the Classical and Scientific Sections of the Graduating Class.

2. The graduating honors shall be as follows :

FIRST HONOR.	Valedictory.
SECOND HONOR,	Latin Salutatory.
THIRD HONOR.	Philosophical Oration.
FOURTH HONOR,	Scientific Oration.

3. These honors and orations shall be awarded in the order named, according to grade made up of the combined marks in all the subjects of the course.

4. An oration to be known as the RHETORICAL HONOR shall be awarded to that member of the class who shall have received the highest grade in Composition and Elocution during the Junior and Senior years, provided he rank in general grade of scholarship among the first half of his class.

In case the Rhetorical Honor shall fall to one who has also taken one of the four honors for scholarship, an additional speaker shall be appointed according to general grade as fifth in scholarship.

5. Three other orations shall be awarded according to grade in Composition and Elocution, during the Junior and Senior years, provided the recipients rank among the first two-thirds of the class in general grade of scholarship.

On and after Commencement Day in 1894 the following regulations are to govern the assignment of graduation honors and the appointment of speakers at Commencement :

There shall be three scholarship honors in each section of the Graduating Class, awarded to those students who shall stand first, second and third respectively, in all the

required studies of the Classical or Scientific curriculum, provided that in each individual case the student so standing shall rank among the first four in the major subject or subjects of his elective course.

An oration to be known as the Rhetorical Honor shall be awarded to that member of either section of the class who shall have received the highest grade in Composition and Elocution during the Junior and Senior years, provided he rank in general grade of scholarship among the first half of his class in all of the required subjects of the Classical or Scientific curriculum.

A student may receive either one of the three Scholarship Honors and the Rhetorical Honor, but he shall deliver only one oration at Commencement.

Two other orations shall be awarded according to grade in Composition and Elocution during the Junior and Senior years, provided the recipients rank among the first half of either section in general grade of scholarship in all of the required subjects of his curriculum.

#### DEGREES AND POST-GRADUATE STUDIES.

The degrees of A.M. and M.S. are no longer given "in course," but only for work done.

The Faculty will recommend for the degree of Master of Arts or Master of Science candidates otherwise properly qualified, who, after taking the appropriate Bachelor's degree—

1. Shall pursue for at least one year at Rutgers College a course of liberal and non-professional study, approved



by the Faculty, and shall, beside the term examinations, pass a thorough examination on that course and present a thesis on some topic connected with it ; or,

2. Who, not less than three years after taking the Bachelor's degree at Rutgers College, shall make application for the Master's degree, presenting at the same time a certificate of graduation from a Theological Seminary, a Law School or a Medical School, or of admission to the practice of Law or Medicine ; or,

3. Satisfactory evidence of successful labor in that field of education or literature which may have been permanently chosen ; or,

4. In case of Bachelor of Science, satisfactory evidence of successful professional work actually done and advanced professional studies prosecuted.

The degrees of Ph.D. and D.Sc. may be conferred upon resident graduates of the College who shall pursue for two years prescribed courses of study under the direction of the Faculty.

The conditions will be made known on application.

The degree of Civil Engineer is a professional one, and is, on application, conferred upon graduates of the College who have taken the degree of Bachelor of Science, and subsequently have passed three years in the practice and study of engineering, with results satisfactory to the Faculty.

The applicant is required to furnish a statement of the work upon which he has been engaged, and to present a thesis or discussion of some engineering work which he

has done. The application and thesis must be presented to the Secretary of the Faculty at least one month before Commencement.

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## REGULATIONS.

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Morning prayers are attended in the College Chapel each morning, except Saturday and Sunday, at 8:40 o'clock.

A Bible-Class is held Sunday morning in the College Chapel at 9:30 o'clock. Students are required to attend it.

A sermon is preached every Sunday morning in the College Chapel at 10:30 o'clock. Students are required to be present.

They are expected, also, to attend public worship in the afternoon or evening, at such place as their parents or guardians may direct.

No student is allowed to leave the city during term time without permission from the Registrar.

Excuses for absence from all College duties must be obtained from the Registrar.

Unexcused absences are reported to the Faculty; and a student is not allowed to make up the recitations omitted, but receives zero as a mark.

Recitations (except in cases of "Electives") are marked on a scale of 100, and the average standing of each student is made up at the end of each term, and sent to his parent or guardian. A mark at examination counts as much as

one-third of the term's work up to the time of examination.

If the grade of a student in any term falls below 60 per centum of the maximum in one of his studies, he is conditioned in that study, and must be re-examined therein.

If the average of any student in any study at any time falls below 60 per centum of the maximum grade, his case must be acted on as the Faculty shall deem necessary.

If any student's average grade in any term falls below 60 per centum of the maximum, he loses his standing in his class, and is required to fall back a year in the course. If his work is not satisfactory after a month's trial here, he is dismissed from College.

Marks given in ELECTIVE work do not enter into the computation of grade; and the only official report of work done in Electives is the announcement, at the end of each term, in each student's report, that he has "failed" or "passed," or "passed with honor," in each of his elective courses.

If any student is found to be notably deficient in his daily recitations, or at the examination in any of his studies, his case is reported to the Faculty, and such action by way of discipline is taken as may be deemed necessary.

No student can be promoted to an advanced class until all his deficiencies are made up; and if he fails to make up all his deficiencies before the opening of the College year, he ceases to be a member of his class. Examinations for making up such deficiencies are held on the Tuesday before the opening of the Autumn Session in September, at 10 A. M.

## COLLEGE EXPENSES.

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**FEES.**

Tuition, per annum, . . . . .	\$75 00
Incidentals—Janitor, Fuel, Reading-Room, per annum, . . . . .	10 00
Admission Fee, . . . . .	5 00
Graduation Fee, . . . . .	7 50
Analytical Chemistry, extra, per term, . . . . .	15 00
Electricity, extra, per term, . . . . .	10 00
Biology, extra, per term, . . . . .	5 00

Of the above expenses, the admission fees are payable, on entrance, to the College Treasurer; the incidental expenses are payable at the beginning of the first term, in September; of the tuition fees, one-third, viz., \$25, is payable within ten days after the beginning of each term. All checks should be made payable to the Treasurer of Rutgers College.

Students in the Engineering Course are required to procure sets of draughting instruments, costing from \$10 to \$20. They are advised to defer the purchase of these instruments until entering College, as they will then have the advantage of procuring them under the direction of the Professor of Draughting.

Students in Analytical Chemistry are charged \$15 additional per term, for chemicals and use of laboratory, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with the necessary sets of apparatus, which may be obtained from the regular apparatus

dealers, or from the Laboratory Supplies department. These sets are retained through the year, but at the end of it, if the owners do not wish to keep them, they will be purchased at a fair price. If proper care has been exercised, a small discount only (about 10 per cent.) from the original cost will be made. All breakage will be charged in full.

Students in Electricity are charged \$10 extra, per term, throughout the Junior and Senior years, for the use of laboratory and apparatus, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with files, pocket magnifiers and towels. All damage to College apparatus will be charged in full.

Students in Biology are charged \$5 extra, per term, for the use of instruments and laboratory, which amount must be paid within ten days after the beginning of the term.

Students in the Classical Course, electing Physics, are charged \$5 extra, per term, for the use of laboratory and apparatus, which amount must be paid within ten days after the beginning of the term.

#### BOARD.

Board, with furnished room, can be obtained in New Brunswick at the present time for \$4 to \$7 per week; board without rooms for \$3 to \$5 per week. Students having the ministry in view may obtain rooms in Hertzog Hall, in the Theological Seminary, free of charge. These rooms are heated and lighted.

The Faculty are empowered to pass such regulations relative to the number of boarders in each house as they think proper; and students shall board only at such places as are approved by them.

By combining in clubs, students are able to reduce somewhat their expense for board.

Free scholarships and pecuniary assistance may be given to young men of approved character and ability, whose family circumstances are such as to make this assistance necessary. No deserving student who has shown perseverance and capacity is allowed to give up his course for lack of assistance.

#### **DORMITORY—WINANTS HALL.**

The late GARRETT E. WINANTS, Esq., of Bergen Point, N. J., a Trustee of the College, gave to the College a handsome and spacious Dormitory, which is located on the west side of the Campus, fronting the east. The colonial style of architecture was adopted, in harmony with the old College building, Queen's, and combining with the dignity of an academic structure the hospitality and homelikeness suggested by the American mansions of the latter part of the last and the beginning of the present century.

**DIMENSIONS.**—The building is 145 feet long by 65 feet wide, the center portion being 40 x 72 feet. It is four stories high, with basement and ample cellar.

**MATERIALS.**—The basement and first story are of Newark or Belleville brown-stone, with rock-faced, regular-coursed ashlar; the columns of the recessed porches, the

cornices and other trimmings, are of cut stone. Above the first story the walls are of red Trenton pressed brick; the pilasters and main cornice and facings of dormer windows are of buff Roman brick with terra-cotta enrichments. In the pediment of the center building the coat of arms of the Reformed Church and the legend of the College,—“*Sol justitiae et occidentem illustra*,” 1766,—are modeled in terra cotta, and over the main entrance the name of the building is carved in stone. The steep roofs are of slate, the deck being surrounded by a balustrade. The floors are double and deafened; all the corridors and halls are of maple; the dining, reception and students' rooms, of yellow pine. The doors and trimmings are of white and yellow pine, finished in natural colors, without paint. The stairways are of oak. The walls are of plaster, of yellow-toned color. Handsome mantels and wainscoting of yellow pine are in the main hall and assembly and dining-rooms. A clock has been placed at the top of the building.

**ARRANGEMENTS OF THE HALL.**—The main entrance is a broad Loggia or recessed porch, and there are also entrances at both ends of the building. On the first floor is a spacious hall, with a broad stairway as a central feature, and fire-places of Roman brick at either end, the intervening spaces being furnished for reception of visitors. The dining-room, 37 x 36 feet, is in the rear of the hall, and connected with it is a large assembly-room, 47 x 26.3 feet. These two rooms can be used together for Alumni dinners and other social and public occasions; ample serving-rooms, pantries, etc., adjoin the dining-room.

**STUDENTS' ROOMS.**—The building accommodates 120 students. The rooms are arranged in suites of a study and two single sleeping-rooms, for two room-mates, and there are a few single rooms. Special attention is given to light, ventilation and sanitary appliances, and to the necessary quiet retirement and privacy of the students. These rooms occupy portions of the first and fourth, and the whole of the second and third stories.

The kitchen, and laundry, stewards' and servants' apartments are in the fourth story, thus securing the proper isolation and management of the employes, and freedom from the odors and other inconveniences of basement kitchens. Dumb-waiters and private stairways extend from the cellar to the fourth story. Ample provision is made for fire-escapes and other securities against accidents.

The entire building is heated by steam, which can be made available for other purposes if deemed desirable. Bath-rooms, lavatories, linen closets and store-rooms are on each floor.

The large study-rooms are each furnished with two study tables and two chairs. The bed-rooms are each furnished with a solid oak set, consisting of bedstead (springs and mattress), bureau, washstand and two chairs. The remaining furniture, such as sheets, pillows, pillow-cases, coverlids, towels, bowl and pitcher, etc., are to be supplied by the occupant. The schedule of prices for single rooms and suites of rooms, heat and gas light included, will be furnished upon application.

In drawing for choice of rooms, the order of classes will be followed, precedence being given to the Seniors.



Any person drawing a suite of rooms may choose his associates from any of the classes. Rooms are to be taken for the full year, unless specially released by the Dormitory Committee. Rent is payable in advance, one-third at the beginning of each term. Agreement to pay rent is for the entire suite, and must be signed by the student who draws it, or his guardian. Rooms may be occupied from the Monday preceding the opening of the College year to the Saturday following Commencement.

BOARD.—A matron who has had long experience and is known for her competency, has been engaged to assume the management of the building so far as the care of the rooms and the furnishing of board are concerned. The charge for board for the present year to the students is \$3.75 per week, and to their relatives and friends who may be transiently stopping with them, \$1.50 per day.

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## BENEFICIARY AID.

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### 1. Van Benschoten Fund.

This fund, the gift of the REV. ELIAS VAN BENSCHOTEN, in 1814, amounting to \$20,813, was given in trust jointly to the General Synod of the Reformed Church and the Trustees of Rutgers College, to aid in the education of indigent students for the ministry. The students who

enjoy the benefits of this fund are appointed by the Trustees of the College on the nomination of the General Synod of the Reformed Church, and receive \$150 annually.

#### 2. Knox Fund.

This fund, consisting of \$2,000, was given by Mrs. REBECCA KNOX, of Philadelphia, in 1815, to the Trustees of Rutgers College, the income from it to be expended for the support of one student in the Theological Seminary.

#### 3. W. H. Smock Fund.

WILLIAM H. SMOCK, of Marlboro, N. J., left by his will, to the Trustees of Rutgers College, the sum of \$500, to be invested as a fund, the interest of which should be used to aid in the education of young men for the ministry. This legacy was received in 1859, and has been since that time duly employed for the purpose named.

#### 4. Mandeville Fund.

In 1865, the Trustees of Rutgers College received from the executor of the will of WILLIAM MANDEVILLE, of New York City, the sum of \$2,000; said sum to be invested, and the income thereof to be applied to the support of a theological student in the College.

#### 5. Voorhees Fund.

ABRAHAM VOORHEES, of Franklin Park, N. J., bequeathed by his will \$26,000 to the Trustees of Rutgers

College, the income of which is to be expended in aiding worthy young men who are candidates for the ministry, while pursuing their studies in Rutgers College. A grant of \$200 per annum is made to the students thus receiving aid.

#### 6. The Brownlee Memorial Fund.

This fund consists of \$2,000, the income of which is to be used for purposes of ministerial education. It was given in 1891 by Mrs. WILLIAM A. BLOODGOOD, of New York, in memory of her father, the late WILLIAM C. BROWNLEE, D.D., who was at one time Professor of Languages in the College, and afterwards for many years an active and efficient Trustee.

#### 7. Free State Scholarships.

The law of the State of New Jersey granting to the Scientific Department of Rutgers College the Agricultural College Endowment, provides for the education of forty State students free of expense for tuition. These scholarships are distributed among the counties in proportion to their population, and the appointments to fill vacancies are made by the County Superintendents. The appointment gives the right to a course of instruction of four years in Rutgers Scientific School, to students successfully passing the entrance examinations. The Trustees of the College, in 1888, voted ten additional scholarships "at large" for students from New Jersey in the Scientific School. By a law of the State passed March 31st, 1890, a free scholarship for each Assembly District each year is established. See pages 85, 86, 87.

**8. Board of Education.**

The Board of Education of the Reformed Church grants aid to young men preparing for the ministry in the denomination. The conditions are that the persons receiving aid shall have been members of some Evangelical Church one year, and at the time members of some Reformed Church. The aid may be obtained either while in College or in the Theological Seminary.

At present the amount given is \$150 per annum. Information may be had by addressing the Secretary of the Board, 26 Reade street, New York.

**9. Rooms for Students.**

Such rooms in Peter Hertzog Hall as may not be required for the use of the students of the Theological Seminary, are allowed to be occupied by the students of the College who have the ministry in view, and on the same conditions as the members of the Theological Seminary, *i. e.*, free of charge.

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**HONORS AND PRIZES.**

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In every case where it is expected that a prize will be awarded for work done, it is distinctly announced that unless in the opinion of the examiners the work submitted is of such excellence as to merit a prize or prizes, no prize will be awarded.

All prizes and honors are open equally to members of the Classical and Scientific Departments, except in cases where prizes are specially limited to one department by the donor. Each competitor for a prize must sign a written declaration that the essay or other work offered by him is his original and unaided work. The essays are to be written on a paper of a prescribed kind, and the successful essay is to be deposited in the College Library, before the writer is entitled to the prize.

## 1. HONORS.

### 1. Honors in Elective Studies.

Department or Individual Honors may be granted in each elective subject. Of these there are two in each Classical course, and one in each Scientific course. Such an honor will be granted to that student who stands highest in the particular elective subject, on two conditions:

1. Provided that he stand in the first third of the Classical or Scientific Section of his class in the required studies of his course; and,
2. Provided that he be recommended to receive that honor by the Professor or Professors who have instructed him in the elective subject or subjects.

Competition for individual or department honors shall begin where the courses begin to diverge, *i. e.*, with the first term, Junior year, in the Classical Department, and with the first term, Sophomore year, in the Scientific Department.

**2. Honorable Mention for Work outside the Course done  
Without Reference to a Prize.**

For the encouragement of independent reading and study and original investigation, under the direction of the Faculty, honorable mention is made of students who give evidence of thoroughness in such work, and pass a satisfactory examination.

**2. PRIZES.**

**1. Suydam Prize for Composition.**

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be given to the member of the Senior Class who shall write the best English Composition on the subject assigned to the class by the Professor of Rhetoric. Competitors must hand in their compositions on or before April 18th. Subject for 1892: "The Scottish School of Philosophy; its Founders, Characteristics and Influence."

**2. Suydam Prize in Natural Science.**

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall have made the greatest attainments in Natural Science. The examination is upon all the subjects of Natural Science in the College course, and is conducted by the Professors in those subjects. The questions and answers are required to be written.

**3. Brodhead Classical Prize.**

This prize is the gift of Rev. Dr. JACOB BRODHEAD and his son, J. ROMEYN BRODHEAD, LL.D. It is the interest on \$500, *i. e.*, twenty-five dollars, to be given to the best Senior Classical scholar on the following conditions:

First. "That those who offer themselves as candidates for it shall be subjected to a special examination, at a time to be fixed by the Faculty near the close of the Senior year."

Second. "That the subject of the examination be a passage or play of some Classical author (not included in the College programme of studies), to be selected by the Classical Professors, and to be announced at least one month before the time fixed for the examination."

Third. "A subject for an essay shall be announced at the same time, and the essay shall be given in on the day of examination."

Fourth. "Both the examination and the essay shall be taken into account in the adjudication of the prize. A law copy of the essay of the prize-man shall be handed in by him before the medal is put into his hands, to be preserved among the archives of the College."

(a) Subject of Essay to be written in Greek, not less than five (5) foolscap pages: "Plato's Doctrine of Ideas."

(b) Subject for Examination in Greek: "Plato's Republic," Books V., VI., VII., together with the whole of the "Dialogue of the Parmenides."

If there be three candidates or more, there will be a second prize of \$20.

**4. Bradley Mathematical Prize.**

This prize is given by Hon. JOSEPH P. BRADLEY, LL. D., and consists of a valuable Mathematical work, which is to be bestowed on the student of the Senior Class who shall present the best solution of a set of Mathematical problems to be proposed to the class by the Professor of Mathematics before the close of the second term.

**5. Myron W. Smith Prizes.**

These prizes were founded by LYNDON A. SMITH, M. D., of Newark, in the name of his son, Adjutant MYRON W. SMITH, who was a graduate of the College, and who gave his life in the late war to the cause of his country. They consist of the interest of \$500 (twenty-five dollars), proportionately appropriated to two medals, one of gold and the other of silver, which are to be awarded respectively to the best and second-best speakers of the Sophomore Class. Only those students who shall have pursued, in the College, the regular studies of the classical or a full scientific course from the beginning of the Freshman year, shall be allowed to contend for these prizes.

The competition for these medals shall take place before a committee of the Faculty, when the best and second-best speakers shall be selected, to whom the medals shall be awarded, and six others shall receive honorable mention in their order of excellence. The medals shall be presented at Commencement.



**6. Tunis Quick Prize in Spelling and English Grammar.**

This prize, the gift of the late P. VANDERBILT SPADER, Esq., of New Brunswick, is the income of \$300, at 5 per centum, and is to be presented to that member of the Freshman Class, Classical or Scientific, who shall pass the best examination in Spelling and English Grammar.

The examination is to be conducted in writing by the Professor of English Literature, at as early a day as convenient in the second College term, and under such regulations as the Faculty may from time to time establish.

The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition. In case the prize be not awarded in any year, it is to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prize are subject to change by the Board of Trustees.

**7. Peter Spader Prizes in Modern History.**

These prizes, the gift of the late P. VANDERBILT SPADER, Esq., are two in number, the income of \$400 and \$300, respectively, at 5 per centum, and are to be awarded to those members of the Sophomore Class, Classical or Scientific, who shall present the best essays on some subject in Modern History, selected by the Professor of History, with the approval of the Faculty.

The subject is to be announced at the close of the Freshman year, and the competing essays are to be handed in on or before the last Monday in May of the Sophomore year.

The committee annually appointed by the Faculty may decline to award these prizes, or either of them, for want of merit in the essays, or for failure of proper competition. In case the prizes be not awarded in any year, they are to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prizes are subject to change by the Board of Trustees.

Subject for 1892: "A History of Indian Legislation in the United States."

**8. Appleton Memorial Prize in Moral Philosophy.**

This prize was founded by a gift of \$500, from the Rev. SAMUEL E. APPLETON, D.D., in the name of his mother, Mrs. ELIZABETH APPLETON. It consists of twenty-five dollars, the interest of the above sum, and will be given "to the member of the Senior Class who shall pass the best examination in Moral Philosophy."

**9. Bowser Engineering Thesis Prize.**

A prize consisting of a valuable Engineering work is given by Prof. E. A. BOWSER, LL.D., to that member of the Engineering Section of the Senior Scientific Class who shall present the best thesis upon some Engineering subject at graduation.

**10. John Parker Winner Memorial Prize in Mental Philosophy.**

This prize consists of twenty-five dollars, given by JOHN WINNER, JR., and his wife, in memory of their deceased

son, JOHN PARKER WINNER. It will be open to competition for students in both the Classical and Scientific Sections who are pursuing the study of Mental Philosophy, and will be bestowed on the one who shall pass the best examination on some work assigned by the Professor of Metaphysics.

Work for 1892: Berkeley's Principles of Knowledge, Dr. Krauth's Edition, pages 72-122, and 193-281.

**11. William H. Van Doren Prize for the Best Essay on  
Christian Missions.**

This prize consists of twenty dollars, the gift of the Rev. WILLIAM H. VAN DOREN, D.D. It is open to competition for members of the Senior and Junior Classes in both sections, and for members of the Theological Seminary.

**12. Junior Exhibition.**

Eight members of the Junior Class are chosen each year, in equal numbers from the Peithessophian and Philoclean Literary Societies, who deliver original speeches at an exhibition held on the Tuesday evening preceding Commencement. The selection is made by a committee of three persons, of whom one is chosen by each Society and a third by the Faculty and is based upon relative excellence as writers and speakers.

A prize of twenty-five dollars, the gift of RALPH N. PERLEE, Esq., of New York City, is awarded by a special committee at the time of the exhibition to that orator who shall be adjudged the best writer and speaker among the contestants.

**13. Hart Prize in English Literature.**

A prize of twenty-five dollars is offered to the members of the Sophomore Class for the best essay upon a subject in Literature; the theme is assigned by the Professor of that Department, and the prize is awarded by a committee appointed by him.

Subject for 1892: "Macaulay as an Essayist."

**14. The Bussing Prizes for Extempore Speaking.**

Mrs. ANN BUSSING, of New York City, has given to the College \$1,000, the income of which (fifty dollars per annum) is to be expended each year for books, which shall be selected by the President of the College, and given as follows: The First Prize, of thirty dollars, to that member of the Senior Class who shall prove himself to be the best extemporaneous speaker; the Second Prize, twenty dollars, to the second-best extemporaneous speaker of the Senior Class. The prizes are to be awarded by the Faculty of the College, or by a committee whom they shall name, and shall be awarded after a public debate to be held in the latter part of the College year. In awarding the prizes, "strict attention shall be given to logical and forcible presentation of thought, full and accurate information as to matters of fact, and grace and effectiveness in delivery." For the sake of training students in the clear expression of intelligent thought upon matters of public interest, each class has an exercise in extempore speaking twice in each term. The subject is announced to the class, and, after five minutes for thought, the members of the class discuss the subject or debate the question before a committee.

**15. Van Vechten Prize—Essay on Christian Missions.**

A. V. W. VAN VECHTEN, Esq., of New York, has founded, in honor of his mother, the late LOUISA VAN VECHTEN, and his father, Rev. Dr. SAMUEL VAN VECHTEN, a prize of sixty dollars, by the gift of \$1,000, the prize "to be given annually to that student of Rutgers College who shall be adjudged by the Faculty of the Theological Seminary of the Reformed Church of America, at New Brunswick, to have presented an article, original with himself, and the best submitted—the most conclusive and inspiring to strengthen faith in and love for Foreign Missions." Essays to be presented on or before May 1st of each year.

**16. Liebig Prize for Best Chemical Thesis.**

A prize of twenty-five dollars, or equivalent value in books, will be given by Prof. P. T. AUSTEN, F.C.S., to that student of the Chemical Section of the Graduating Scientific Class whose thesis, embodying the results of his study and laboratory work, shall be adjudged to be worthy of the prize.

**17. The Class of 1876 Prize Fund for the Encouragement of the Study of Political Philosophy.**

The Class of 1876 have given to the College five hundred dollars (\$500) as the foundation of a Prize Fund (which they express the hope that they may increase from time to time, until it shall be sufficiently large to establish a Fellowship), for the encouragement of the study of Political Philosophy. The income of this fund is to be awarded each year "to that member of the Senior Class

(either Classical or Scientific) who shall be adjudged entitled to it, \* \* \* on the basis of an original essay on some subject in Political Philosophy, assigned by the Professor of that science in the College, and upon a competitive examination in a text-book also selected by him ; " the committee of award to consist of " three competent persons selected by the Faculty of the College, at least one member of the committee to be a member of the Class of 1876 as long as any may be living."

(a) Subject of essay for 1892: "Relations of the United States to other American Powers since 1820."

(b) An Examination on the sources for a History of the Monroe Doctrine.

#### 18. Upson Prize in American Literature.

For the encouragement of study in American Literature, a prize of fifty dollars is offered by the Librarian, to be awarded by a committee appointed by him, to that member of the Junior or Senior Class who shall write the best essay upon a subject assigned by him, and upon the following conditions :

First. The essay, of not more than 5,000 words, must be presented in writing upon the standard thesis paper of the College, with the understanding that the original copy is to be preserved in the College Library.

Second. Each competitor must sign his essay with a fictitious name, according to the general rules of the College, and hand it to the Librarian on or before May 2d, 1892.

Third. The prize may be withheld from any and all

papers offered, either for want of merit or for failure of proper competition.

Subject for 1892: "Emerson, the American Poet of Thought."

**19. The Bradley Prize in Roman Law.**

This prize is given by Hon. JOSEPH P. BRADLEY, and consists of a valuable work on Roman Law.

The subject of the essay for 1892 will be: "The Roman Law Respecting Injuries to Person, Property and Reputation."

The examination upon text will include Institutes, lib. IV., tits. 1, 2, 4, 5, Dig. lib. IX., tit. 2, ff. 2, 27, and Dig. lib. XLVII., tit. 10, ff. 1 (Ulpian).

The prize may be competed for by Seniors and Juniors.

**20. The Class of 1866 Prize for Attainments in Electrical Science.**

The Class of 1866, being the Centennial Class after the grant of the first charter, has established a prize of fifty dollars, to be awarded to that member of each graduating class who has taken a full course leading to the degree A.B. or B.S., including the higher mathematics and physical laboratory practice, and who has shown, in the judgment of the Faculty, the greatest degree of proficiency in the science of Electricity.

A special examination, conducted by an appropriate committee of the Faculty, will be held Saturday, May 21st, 1892, at 2 P. M., to select the recipient of the prize. If, in the opinion of the committee, none of the competitors deserve the prize, it will be withheld.

**21. The Delta Phi Senior Orator Prize.**

A prize of twenty-five dollars is offered by the Epsilon Chapter of the Delta Phi Fraternity to that member of the Senior Class who shall write and pronounce the best English Oration.

The basis of award of this prize shall be as follows :

Essays shall be written upon any one of certain subjects designated by the Faculty and submitted to a committee thereof.

From these essays, the best, not to exceed five in number, shall be chosen, and their writers having given these essays such form as may best suit the purpose, shall pronounce them in public before a committee appointed by the Faculty, who shall thereupon adjudge the prize.

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**LIBRARY.**

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The Library of the College, containing 28,000 volumes, is open for consultation during each term as follows: On Mondays, Tuesdays, Wednesdays, Thursdays and Fridays, from 8 to 8:40 A. M., and from 12 M. to 12:50 P. M., and from 2 P. M. to 4:30 P. M.; on Saturdays from 9 A. M. to 12:50 P. M., and from 2 to 4:30 P. M. Students are allowed free access to the books, and are encouraged to become familiar with the proper methods of using a library for literary work.

In 1887, the late P. VANDERBILT SPADER, Esq., of New Brunswick (a member of the Class of 1849), gave to the



College his personal library, valued at \$15,000, and consisting of about 5,000 books, among them many very valuable art volumes, and collections especially rich in State and local history, and in books of reference. By his will the College has received \$10,000, the income of which is to be expended for the maintenance and increase of the P. Vanderbilt Spader Library Gift.

By the gift of a permanent fund of \$1,000 from JAMES SUYDAM, Esq., supplemented by gifts from other sources, the library is supplied with the leading periodical publications in the various departments.

By the courtesy of the Theological Seminary of the Reformed Church, the Sage Library of more than 40,000 volumes is opened to the students of Rutgers for consultation; and under certain limitations books are drawn from it as well. It is within four minutes' walk of the College campus.

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## MUSEUM AND APPARATUS.

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The Trustees solicit contributions from the friends of the College to the collections of the Museum. It is their wish to increase greatly the present valuable collections by additions in all departments. Donations of specimens illustrating Geology, Mineralogy, Natural History, Numismatics and Antiquities, and the Industrial Arts, are earnestly requested. Ample rooms are provided in the new Geological Hall for the proper preservation and display of such specimens. By the kindness of numerous friends,

suitable cases have been provided to receive the collections which the College already possesses, and they are now being arranged as rapidly as circumstances will allow.

The apparatus of the College for illustrating the various branches of science is extensive and serviceable. It has been obtained as the wants of the classes demanded, and comprises many recent additions to the Chemical and Philosophical apparatus. The students in Analytical Chemistry are provided with the requisite facilities for making analyses. The arrangements for these departments in the buildings recently erected are of the most ample and convenient description.

**The Thomas L. Janeway, M.D., Memorial Collection**

to illustrate Classical Archæology, is the gift of the heirs of Dr. THOMAS L. JANEWAY, of the Class of 1863.

It already includes (1) eight casts from marbles typical of the chief periods in the history of sculpture. These casts were manufactured by Brucciani & Co., of London. (2) Five hundred casts from engraved gems (cameos and intaglios) and coins, Greek and Roman. These were selected with an eye both to the study of the development of the art and to the especially full illustration of its best achievements. The workmanship on these casts is that of Augustus Ready, of the British Museum. (3) Eight hundred stereopticon slides, of which all but eighty-two were made by the well-known Levy, of Paris. (4) One thousand photographs and restorations. Among the photographers are Bonfils, of Beirut; Sommer, of Naples; Anderson, of Rome; Mansell, of London; Lombardi, of London; Quaas, of Berlin; Hauteœur, of Paris, etc., etc.

The collection, made in Europe by a member of the College Faculty, is designed to illustrate the topography, art, life and literature of Ancient Greece and Rome, and for this purpose is used constantly by College classes.

#### **The Entomological Collection.**

Rev. GEORGE D. HULST, Ph.D., of the Class of 1866, has given to the College his entire collection of insects, chiefly Lepidoptera. Dr. HULST has gradually accumulated during the last fifteen years a large number of specimens and species, and has done considerable systematic work in many groups. The collection is valuable, therefore, not only from the material which it contains, but also because it represents scientific results and contains types of many species described by the donor. It is intended to make this collection the nucleus of a classified arrangement which will be accessible to students and will facilitate the study of entomology in regular and advanced courses.

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### CATALOGUES.

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Former students of the College, whether graduates or not, are earnestly requested to keep the College informed of any change in their address or occupation, of works published, offices held, etc., both to facilitate the sending of the annual catalogue, and to furnish material for general catalogues, when printed. Catalogues of the College, etc., will be sent to alumni or friends of the College who send to the Registrar their addresses, for this purpose.

## REGISTER.

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### 1. SOPHOMORE ORATORS, CLASS OF 1893.

RICHARD SWANN LULL, . . . . .	Trenton, N. J.
WILLIAM GELON MCKNIGHT, . . . . .	New Brunswick, N. J.

The following are named in the order of their appointment  
according to merit:

BURTON S. PHILBROOK, . . . . .	Jersey City, N. J.
ELLIS R. WOODRUFF, . . . . .	New Brunswick, N. J.
CHARLES E. TINDELL, . . . . .	New Brunswick, N. J.
ISAAC J. VAN HEE, . . . . .	Pultneyville, N. Y.
HENRY C. CUSSLER, . . . . .	Catskill, N. Y.
FRANK MALVEN, . . . . .	Port Jervis, N. Y.

### 2 JUNIOR ORATORS, CLASS OF 1892.

JUNIOR EXHIBITION, JUNE 16, 1891.

PEITHESOPHIAN SOCIETY.	PHILOCLEAN SOCIETY.
PHILIP M. BRETT.	JAMES D. CARR.
WALTER T. SCUDDER.	DRURY W. COOPER.
WILLIAM C. SHERWOOD.	JAMES B. THOMAS.
ROBERT S. WINN.	FRANK R. VAN HORN.

### 3. GRADUATING EXERCISES, CLASS OF 1891.

COMMENCEMENT, JUNE 17, 1891.

#### HONORS.

MARCUS CALDWELL SEARS, . . . . .	Blooming Grove, N. Y.
Valedictory, First Honor.	
ELIHU CALVIN BRYAN, . . . . .	Shekomeko, N. Y.
German Salutatory, Second Honor.	
GEORGE ANDREWS MITCHELL, . . . . .	Vineland, N. J.
Philosophical Oration, Third Honor.	
JOHN CHARLES AYDELOTT, . . . . .	Pekin, Ill.
Scientific Oration, Fourth Honor.	
JOSEPH COMPTON CASTNER, . . . . .	New Brunswick, N. J.
Rhetorical Honor.	

ORATIONS.

JOHN HOWARD RAVEN, . . . . . Brooklyn, N. Y.  
 JASPER SAMUEL HOGAN, . . . . . Guilderland Center, N. Y.  
 HOWARD AUGUSTUS REYNOLDS, . . . . . New Brudswick, N. J.

MASTER'S ORATION.

FREDERICK HUTCHINSON COOK, . . . . . Bound Brook N. J.

4. DEGREES CONFERRED.

Degree of Bachelor of Arts Conferred on Candidates in Course.

JAMES BISHOP, JR.	FRANK REID MILLER
EDWARD OTIS CHICKERING.	WILLIAM POHLMAN POOL.
HARRY ROSE DANNER.	JOHN HOWARD RAVEN.
HOWARD CROSBY HASBROUCK.	PATRICK AUGUSTINE RAY.
JASPER SAMUEL HOGAN.	HOWARD AUGUSTUS REYNOLDS.
ROBERT JAMES HOGAN.	HERBERT BENNETT ROBERTS.
ABRAHAM WHITTAKER HOPPER.	WALTER COOLEY SAMPSON.
CHARLES WESLEY HULST.	EDWARD VAN VECHTEN SEARLE.
HARRY LOCKWOOD.	CLIFFORD HENRY STRANG.
SAMUEL CLIFFTON MABON.	WILLIAM VAN DEURSEN STRONG.
WILLIAM FORDER METS.	ERASTMUS AMES WHITENACK.

GILLET WYNKOOP.

Degree of Bachelor of Science Conferred on Candidates in Course.

JOHN CHARLES AYDELOTT.	SAMUEL ARTHUR JOHNSON.
PHILANDER BETTS, 8d.	GEORGE ANDREWS MITCHELL.
ELIHU CALVIN BRYAN.	MARCUS CALDWELL SEARS.
JOSEPH COMPTON CASTNER.	FREDERICK SEYMOUR SMITH.
FACIL JEWELL CHALLEN.	ISAAC MABBETT SUTTON.
ROBERT JOSEPH DOUGHERTY.	ARTHUR BENJAMIN TOTTEN.
HARRY WILLIAMS FULLER.	CORNELIUS D. VREELAND, JR.
THOMAS MANDEVILLE HOPPER.	EDWARD LASKY WELLING.

Degree of Master of Arts Conferred.

LEWIS BIRGE CHAMBERLAIN, '86.	FRANK LAWYER MAYHAM, '88.
WILLIAM SAMUEL BISHOP, '87.	SHERMAN GRANT PITT, '88.
STEPHEN DU BOIS DEMAREST, '87.	JOHN HOWARD VOORHEES, '88.
WILLIAM ARMITAGE BEARDSLEE, '88.	OSCAR MCMURTRIE VOORHEES, '88.
FREDERICK HUTCHINSON COOK, '88.	FERDINAND SCHENCK WILSON, '88.
CHARLES STERLING WYCKOFF, '89.	

## Degree of Civil Engineer Conferred.

JOHN EDWARD HILL, '84.

## Honorary Degrees Conferred.

Sc.D.	REV. JOHN C. CRUIKSHANK,	Little Falls, N. J.
Sc.D.	JOHN B. SMITH,	New Brunswick, N. J.
Ph.D.	REV. GEORGE D. HULST,	Brooklyn, N. Y.
Ph.D.	ANTHONY WOODWARD,	New York City.
L.H.D.	GEORGE BUCKHAM,	New York City.
L.H.D.	GEORGE M. WAHL,	Braintree, Mass.
LL.D.	HON. ALEXANDER T. MCGILL,	Jersey City, N. J.
LL.D.	HON. ABRAHAM V. VAN FLEET,	Newark, N. J.
D.D.	REV. ISAAC P. BROKAW,	Freehold, N. J.
D.D.	REV. CHARLES I. SHEPARD,	Newtown, Long Island.

## 5. PRIZES AWARDED.

## COMMENCEMENT, 1891.

## SENIOR PRIZES.

Suydam Prize for Composition,	GILLETT WYNKOOP.
Suydam Prize for Natural Science,	P. A. RAY.
Brodhead Classical Prize,	E. C. BRYAN.
*Bradley Mathematical Prize,	M. C. SEARS.
*Bradley Mathematical Prize,	W. F. METS.
Appleton Prize for Moral Philosophy,	J. C. AYDELOTT.
Bowser Prize for Best Engineering Thesis,	C. D. VREELAND.
Liebig Prize for Best Chemical Thesis,	J. H. RAVEN.
Bussing Prize for Extemporaneous Debate, 1st,	C. H. STRANG.
Bussing Prize for Extemporaneous Debate, 2d,	J. C. CASTNER.
Class '76 Political Philosophy Prize,	

## JUNIOR AND SENIOR PRIZES.

Van Doren Prize for Essay on Christian Missions,	J. W. THOMPSON, '92.
Van Vechten Prize for Essay on Foreign Missions,	C. E. CORWIN, '92.
Upon American Literature Prize,	J. W. THOMPSON, '92.
Special Prize in Roman Law,	H. K. DAVIS, '92.

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\*Of equal merit, each receiving the full value of the prize.

JUNIOR PRIZES.

John Parker Winner Memorial Prize in Mental Philosophy, . . . . .	J. B. THOMAS.
Perlee Junior Orator Prize, . . . . .	P. M. BRETT.

SOPHOMORE PRIZES.

Myron W. Smith Prize for Declamation, 1st, . . . . .	R. S. LULL.
Myron W. Smith Prize for Declamation, 2d, . . . . .	W. G. MCKNIGHT.
Hart English Literature Prize, . . . . .	B. S. PHILBROOK.
Spader Prize for Modern History, 1st, . . . . .	H. E. STUDLEY.
Spader Prize for Modern History, 2d, . . . . .	H. C. CUSSLER.

FRESHMAN PRIZES.

Tunis Quick Grammar and Spelling Prize, . . . . .	J. H. THOMPSON.
Sloan Entrance Examination Prize, 1st, . . . . .	H. V. M. DENNIS, JR.
Sloan Entrance Examination Prize, 2d, . . . . .	F. C. VAN DYCK, JR.

6. CLASS-DAY EXERCISES.

CHAPEL.

<i>President</i> , . . . . .	C. H. STRANG, Montrose-on-Hudson, N. Y.
<i>Orator</i> , . . . . .	S. C. MABON, New Brunswick, N. J.
<i>Poet</i> , . . . . .	P. A. RAY, Greenwich, N. Y.
<i>Historian</i> , . . . . .	E. V. V. SEARLE, Hurley, N. Y.
<i>Praesenter of Class Memorial</i> , . . . . .	S. A. JOHNSON, Morristown, N. J.
<i>Prophet</i> , . . . . .	J. H. RAVEN, Brooklyn, N. Y.
<i>Address to Lower Classmen</i> , . . . . .	J. S. HOGAN, Guilderland Center, N. Y.
<i>Praesenter of Mementos</i> , . . . . .	C. W. HULST, Greenwich, N. Y.

CAMPUS.

<i>Ivy Orator</i> , . . . . .	C. D. VREELAND, Little Falls, N. J.
<i>Ivy Planter</i> , . . . . .	W. F. METS, Somerville, N. J.
<i>Ivy Ode</i> , . . . . .	H. R. DANNER, Paterson, N. J.
<i>Pipe Orator</i> , . . . . .	A. W. HOPPER, Spring Valley, N. Y.
<i>Address to President</i> , . . . . .	H. A. REYNOLDS, New Brunswick, N. J.
<i>Committee</i> , . . . . .	<div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;"> W. P. POOL, I. M. SUTTON, T. M. HOPPER, H. W. FULLER. </div> </div>

## 7. RUTGERS CORPS CADETS.

## COMMANDANT.

JOHN J. BRERETON,

First Lieutenant, Twenty-fourth U. S. Infantry.

## STAFF.

W. H. STAFFORD, *First Lieutenant and Adjutant.*G. H. WYCKOFF, *First Lieutenant and Quartermaster.*E. BETTS, *Sergeant-Major.*H. L. HOYT, *Quartermaster-Sergeant.*

## COMPANY A.

*Captain,* . . . P. C. FIELD.  
*First Lieutenant,* F. R. VAN HORN.  
*Second Lieutenant,* W. J. COOPER.  
*First Sergeant,* . R. B. ALLEN.

*Sergeants,* . { D. H. McLAURY.  
                   { F. W. REMSEN.  
                   { C. S. SHAW.

*Corporals,* . { L. L. WETMORE.  
                   { D. LAYTON.  
                   { W. S. MITCHELL.

## COMPANY B.

*Captain,* . . . H. E. BRUERRE.  
*First Lieutenant,* G. S. VOORHEES.  
*Second Lieutenant,* M. F. H. DE HAAS.  
*First Sergeant,* . C. H. E. UTTER.

*Sergeants,* . { H. F. TWITCHELL.  
                   { C. S. CHAMBERLAIN.  
                   { H. V. D. WALDRON.

*Corporals,* . { J. V. N. DORR.  
                   { J. K. HOWARD.  
                   { D. HAND.

## COMPANY C.

*Captain,* . . . A. H. BERRY.  
*First Lieutenant,* G. C. BULLOCK.  
*Second Lieutenant,* J. L. R. MORGAN.  
*First Sergeant,* . E. F. SCATTERGOOD.

*Sergeants,* . { C. E. LOVEJOY.  
                   { J. W. HIGGINS.  
                   { B. F. WARD.  
                   { H. M. DECKEE.  
                   { H. DE MOTT.

*Corporals,* . { F. B. VAN BRAKLE.  
                   { A. C. FOX.  
                   { Y. TAKATSUJI.

## COLOR GUARD.

*Color Sergeant,* . B. F. WARD.  
                           { H. DE MOTT.  
*Color Corporals,* { J. V. N. DORR.  
                           { F. B. VAN BRAKLE.  
                           { D. HAND.



## DISTINGUISHED STUDENTS IN MILITARY DEPARTMENT.

In accordance with recent orders of the War Department, on the graduation of every class the names of such students as have shown special aptitude for military service will be reported to the Adjutant-General of the Army and to the Adjutant-General of New Jersey; and the names of the three most distinguished students in Military Science and Tactics will be inserted in the U. S. Army Register and published in general orders.

The names of the students of the Class of 1891 who were so reported to the Adjutant-General of the Army and the Adjutant-General of New Jersey, were:

JOSEPH C. CASTNER, Cadet Captain.

J. CHARLES AYDELOTT, Cadet First Lieutenant and Adjutant.

MARCUS C. SEARS, Cadet Second Lieutenant.

ISAAC M. BUTTON, Cadet Captain.

The names of the first three will appear in the Army Register for 1892.

## 8. ALUMNI ASSOCIATION.

## OFFICERS FOR THE YEAR 1891-92.

<i>President,</i> . . . . .	REV. P. T. POCKMAN, '75.
<i>Vice Presidents,</i> . . . . .	FOSTER M. VOORHEES, '76.
	JOHN N. CARPENTER, '66.
	REV. ALAN CAMPBELL, '62.
<i>Secretary,</i> . . . . .	THEODORE STRONG, '83.
<i>Treasurer,</i> . . . . .	T. B. BOORAEM, '81.
<i>Necrologist,</i> . . . . .	I. S. UPSON, '81.
	H. A. NEILSON, '78.
<i>Inspectors of Election of Alumni Trustees,</i> . . . . .	REV. J. N. JANSSEN, '48.
	A. V. N. BALDWIN, '79.
<i>Orator Primarius,</i> . . . . .	JOHN D. W. PELTZ, '78.
<i>Orator Secundus,</i> . . . . .	JOHN W. SEARING, '74.

## **RUTGERS COLLEGE PREPARATORY SCHOOL.**

**FOUNDED 1766.**

---

**E R PAYSON, A.M., HEAD-MASTER.**

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While the careful preparation for Colleges and Scientific Schools will be the chief aim of this School, attention will also be paid to students desiring to prepare for business.

The number of pupils at the "Home" is limited to forty, and each boy will receive individual attention and care.

### **LOCATION.**

The location of a thorough preparatory school in a city like New Brunswick is most fortunate. On the Pennsylvania railroad, it is easy of access, being only about one hour from New York, and one and one-half hours from Philadelphia. Trains are passing at all hours of the day. The influences of a college town are excellent for intellectual work. Often parents send their sons to be trained in such a town, to cultivate and stimulate a desire for a more advanced course of study.

New Brunswick is a most healthful location.

### **ADMISSION.**

Pupils will be received at any time. It is earnestly urged, however, both for the individual and the class, that pupils enter promptly at the beginning of the year or quarter.

Each pupil will bring with him a certificate of good moral character from the last school he attended, or from the pastor of the church he has attended.

### **INTERMEDIATE AND PRIMARY DEPARTMENTS.**

The work in these departments is designed to prepare boys of the youngest school age for the more advanced work of the School. The number of pupils is limited. Special care is taken in regard to the morals and language of each boy.

The work of these departments will be continued by Miss ESTHER A. ANDREWS, who has, in a marked degree, won the love and esteem of those under her care. Parents can place their boys with Miss Andrews in perfect confidence.

For any further information, address E. R. PAYSON, A.M., Head-Master, Rutgers College Preparatory School, New Brunswick, N. J.

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CATALOGUE

RUTGERS COLLEGE

NEW BRUNSWICK, N. J.



1892-'93.



CATALOGUE  
OF THE  
OFFICERS AND STUDENTS  
OF  
RUTGERS COLLEGE  
AT  
NEW BRUNSWICK, N. J.

1892-93.

---

CHARTERED AS QUEEN'S COLLEGE, A. D. 1766.

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PRINTED FOR THE COLLEGE.  
—  
1892.

# **RUTGERS COLLEGE PREPARATORY SCHOOL.**

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CATALOGUE

OF

RUTGERS COL

AT

NEW BRUNSWICK, N.



1892-'93.





CATALOGUE  
OF THE  
OFFICERS AND STUDENTS  
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NEW BRUNSWICK, N. J.  
1892-93.

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CHARTERED AS QUEEN'S COLLEGE, A. D. 1766.

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PRINTED FOR THE COLLEGE.  
—  
1892.

## CALENDAR.

## 1892.

SEPTEMBER 20, Tuesday: Examinations for admission.  
 SEPTEMBER 21, Wednesday: First Term begins. Recitations.  
 OCTOBER 1, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 25, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOVEMBER 23-28, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving  
 Recess.  
 DECEMBER 14-20, Wednesday-Tuesday: Examinations. First Term ends.  
 DEC. 20-JAN. 4, Tuesday-Wednesday, 8:40 A. M.: Christmas Vacation.

## 1893.

JANUARY 4, Wednesday: Second Term begins. Recitations.  
 JANUARY 25, Day of Prayer for Colleges.  
 FEBRUARY 22, Wednesday: Washington's Birthday.  
 MARCH 7, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 MAR. 29-APR. 4, Wednesday-Tuesday: Examinations. Second Term ends.  
 APRIL 4-12, Tuesday-Wednesday, 8:40 A. M.: Spring Vacation.  
 APRIL 12, Wednesday: Third Term begins. Recitations.  
 MAY 22-24, Monday-Wednesday: Senior Final Examinations.  
 JUNE 12-16, Monday-Friday: Examinations of Three Lower Classes.  
 JUNE 16, Friday: Reading of Theses by Scientific Seniors, 2 P. M.  
 JUNE 16, 17, Friday, 10 A. M., and Saturday: Examinations for admission.  
 JUNE 18, Sunday: Baccalaureate Sermon, 7:30 P. M.  
 JUNE 19, Monday: Class-Day Exercises, 8 P. M.  
 JUNE 20, Tuesday:  
 Commencement Meeting of the Board of Trustees, 10 A. M.  
 Meeting of the Alumni, 10 A. M.  
 Exercises of the Literary Societies, 8:30 P. M.  
 Junior Exhibition, 8 P. M.  
 JUNE 21, Wednesday: 127th Annual Commencement, 10 A. M.  
 JUNE 21-SEPT. 19, Wednesday-Tuesday: Long Vacation.  
 SEPTEMBER 19, Tuesday:  
 Examinations for admission, 10 A. M.  
 Examinations for removal of June Conditions, 10 A. M.  
 SEPTEMBER 20, Wednesday: First Term begins. Recitations.  
 OCTOBER 7, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 31, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOV. 29-DEC. 4, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving  
 Recess.  
 DECEMBER 18-19, Wednesday-Tuesday: Examinations. First Term ends.  
 DEC. 19-JAN. 3, Tuesday-Wednesday, 8:40 A. M.: Christmas Vacation.

## 1894.

JANUARY 3, Wednesday: Second Term begins. Recitations.

## TRUSTEES.

1892-93.

## EX-OFFICIO.

<b>HIS EXCELLENCY LEON ABBETT, LL.D.,</b>	JERSEY CITY.
<i>Governor of the State of New Jersey.</i>	
<b>HON. MERCER BEASLEY, LL.D.,</b>	TRENTON.
<i>Chief Justice of the State of New Jersey.</i>	
<b>HON. JOHN P. STOCKTON, LL.D.,</b>	TRENTON.
<i>Attorney-General of the State of New Jersey.</i>	

## BY ELECTION.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
<b>AUSTIN SCOTT, PH.D., LL.D.,</b> <i>President of the College.</i>	New Brunswick,	Nov. 25, 1890.
<b>REV. T. E. VERMILYE, D.D., LL.D.,</b>	New York City, 15 West 56th St.	July 24, 1849.
<b>HON. JOHN HOPPER,</b>	Paterson,	July 22, 1851.
<b>MAURICE E. VIELE, Esq.,</b>	Albany, N. Y.,	July 27, 1853.
<b>REV. DAVID D. DEMAREST, D.D., LL.D.,</b>	New Brunswick,	April 13, 1858.
<b>*HON. JOSEPH P. BRADLEY, LL.D.,</b>	Washington, D. C.,	June 29, 1858.
<b>HENRY L. JANEWAY, Esq.,</b>	New Brunswick,	April 8, 1862.
<b>REV. TALBOT W. CHAMBERS, D.D., LL.D.,</b>	New York City, 70 West 36th St.	June 17, 1863.
<b>REV. JOACHIM ELMENDORF, D.D.,</b>	New York City, 35 Mt. Morris Ave.	April 14, 1869.
<b>REV. PAUL D. VAN CLEEF, D.D.,</b>	Jersey City,	April 14, 1869.
<b>SAMUEL SLOAN, Esq.,</b>	New York City, 26 Exchange Place.	June 20, 1871.
<b>HON. GEORGE C. LUDLOW.</b>	New Brunswick,	June 17, 1873.
<b>HON. WILLIAM A. NEWELL, M.D., LL.D.,</b>	Olympia, Wash.,	June 17, 1873.
<b>REV. ISAAC S. HARTLEY, D.D.,</b>	Utica, N. Y.,	June 17, 1873.
<b>REV. JOHN GASTON, D.D.,</b>	Passaic,	June 20, 1876.
<b>HON. HENRY W. BOOKSTAYER, LL.D.,</b>	New York City, 14 East 67th St.	June 20, 1876.

\* Died January 22d, 1892.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
ROBERT F. BALLANTINE, Esq.,	Newark,	June 20, 1876.
*REV. ABRAHAM R. VAN NEST, D.D.,	New York City,	Oct. 29, 1878.
WILLIAM CLARK, Esq.,	Newark,	Oct. 29, 1878.
HON. GEORGE H. SHARPE,	Kingston, N. Y.,	March 4, 1879.
DAVID BINGHAM, Esq.,	East Orange,	March 7, 1882.
HENRY R. BALDWIN, M.D.,	New Brunswick,	June 17, 1884.
FREDERICK FRELINGHUYSEN, Esq.,	Newark,	June 16, 1885.
ERNEST J. MILLER, Esq.,	Albany, N. Y.,	June 16, 1885.
HON. JONATHAN DIXON, LL.D.,	Jersey City,	June 22, 1886.
JAMES NEILSON, Esq.,	New Brunswick,	June 22, 1886.
REV. RODERICK TERRY, D.D.,	New York City, 169 Madison Ave.	June 22, 1886.
†TUNIS G. BERGEN, Ph.D.,	Brooklyn, N. Y., 127 Pierpont St.	Oct. 25, 1887.
REV. EDWARD B. COE, D.D.,	New York City, 42 West 52d St.	Oct. 25, 1887.
ELBERT B. MONROE, Esq.,	Southport, Conn.,	Oct. 25, 1887.
REV. JOHN B. DRURY, D.D.,	New Brunswick,	Oct. 25, 1887.
REV. JAMES LE FEVRE,	Middlebush,	June 16, 1888.
FREDERICK J. COLLIER, Esq.,	Hudson, N. Y.,	June 16, 1891.
ALEXANDER T. VAN NEST, Esq.,	New York City, 31 West 37th St.	June 16, 1891.
PAUL COOK, Esq.,	Troy, N. Y.,	June 16, 1891.
DAVID MURRAY, Ph.D., LL.D.,	New Brunswick,	March 1, 1892.
HON. GARRET D. W. VROOM,	Trenton,	June 21, 1892.
J. BAYARD KIRKPATRICK, Esq.,	New Brunswick,	June 21, 1892.

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REV. DAVID D. DEMAREST, D.D., LL.D., . . . New Brunswick.  
*Secretary of the Board.*

FREDERICK FRELINGHUYSEN, Esq., . . . Newark.  
*Treasurer of the Board.*

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#### STATED MEETINGS OF THE BOARD.

Last Tuesday in October, at 2 o'clock P. M.

First Tuesday in March, at 2 o'clock P. M.

Tuesday before Commencement, at 10 o'clock A. M.

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\* Died May 31st, 1892.

† Resigned June 21st, 1892. Re-elected October 25th, 1892.

FACULTY.

---

AUSTIN SCOTT, PH.D., LL.D.,  
PRESIDENT,

VOORHEES *Professor of History and Political Science.*  
24 Livingston Avenue.

REV. THEODORE SANDFORD DOOLITTLE, D.D., LL.D.,  
VICE PRESIDENT,

COLLEGIATE CHURCH *Professor of Rhetoric, Logic and Mental Philosophy.*  
Seminary Place.

REV. JACOB COOPER, D.D., D.C.L.,

*Professor of the Greek Language and Literature.*  
108 George Street.

REV. CARL MEYER, D.D.,

*Professor of Modern Languages and Literatures.*  
245 Easton Avenue.

FRANCIS CUYLER VAN DYCK, PH.D.,

*Professor of Physics and Experimental Mechanics.*  
84 College Avenue.

EDWARD ALBERT BOWSER, C.E., LL.D.,

*Professor of Mathematics and Engineering.*  
Queen's Building.

REV. CHARLES EDWARD HART, D.D.,

*Professor of the English Language and Literature.*  
88 Livingston Avenue.

## BUTGERS COLLEGE.

LOUIS BEVIER, JR., PH.D.,  
*Professor of Modern Languages.*  
*Secretary of the Extension Department.*  
Bishop Place.

EDGAR SOLOMON SHUMWAY, A.M.,  
*Professor of the Latin Language and Literature.*  
208 Redmond Street.

ALFRED ALEXANDER TITSWORTH, M.S., C.E.,  
*Professor of Graphics and Mathematics.*  
590 George Street.

JULIUS NELSON, PH.D.,  
*Professor of Biology.*  
Adelaide Avenue, Highland Park.

BYRON DAVID HALSTED, SC.D.,  
*Professor of Botany and Horticulture.*  
64 College Avenue.

JOHN BERNHARD SMITH, SC.D.,  
*Professor of Entomology.*  
81 Easton Avenue.

EDWARD BURNETT VOORHEES, A.M.,  
*Professor of Agriculture.*  
88 Easton Avenue.

REV. WILLIAM RANKIN DURYEE, D.D.,  
THEODORE FRELINGHUYSEN *Professor of Ethics, Evidences of Christianity*  
*and the English Bible.*  
17 Union Street.

RUTGERS COLLEGE.

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ALBERT HUNTINGTON CHESTER, E.M., Ph.D., Sc.D.,  
*Professor of Chemistry and Mineralogy.*  
*Curator of the Museum.*  
89 College Avenue.

JOHN JAMES BRERETON, 1st LIEUTENANT, 24TH U. S. INFANTRY,  
*Professor of Military Science and Tactics.*  
Geological Hall.

JOHN CHARLES VAN DYKE, L.H.D.,  
*Professor of the History of Art.*  
Sage Library.

ROBERT WOODWORTH PRENTISS, M.S.,  
*Professor of Mathematics and Astronomy.*  
96 Easton Avenue.

IRVING STRONG UPSON, A.M.,  
*Librarian and Registrar.*  
*Secretary of the Faculty.*  
118 Bayard Street.

EDWARD LUTHER STEVENSON, Ph.D.,  
*Associate Professor of History.*  
60 College Avenue.

CLARENCE LIVINGSTON SPEYERS, Ph.B.,  
*Associate Professor of Chemistry.*  
861 George Street.

\*EDWARD THORN MIDDLETON, B.S.,  
*Instructor in Electricity and Physics.*

EDWARD LIVINGSTON BARBOUR,  
*Instructor in Elocution.*  
210 Townsend Street.

---

\*Died April 16th, 1892.

## RUTGERS COLLEGE.

GEORGE ANDREWS MITCHELL, M.S.,  
*Assistant in Chemistry.*  
Easton Avenue.

WILLIAM EUGENE BREAZEALE, M.M.P.,  
*Instructor in Mathematics.*  
96 Easton Avenue.

EUGENE BETTS, B.S.,  
*Instructor in Electricity and Physics.*  
91 Bayard Street.

JAMES RICKARBY CAMPBELL, A.M.,  
*Extension Lecturer in English Literature.*  
*Instructor in English Literature.*  
Geological Hall.

ALBERT HENRY PEPPER, A.M.,  
*Instructor in Modern Languages.*  
345 George Street.

---

PETER TOWNSEND AUSTEN, PH.D., F.C.S.,  
*Extension Lecturer in Chemistry.*  
22 Union Street.

FRANK ROBERTSON VAN HORN, B.S.,  
*Assistant in Mineralogy.*  
Bleecker Place.

---

The names of the Faculty, after that of the President, are arranged in groups. The Professors, according to seniority of appointment; the Librarian and Registrar; the Associate Professors and Instructors, in the order of their respective appointments.



## CATALOGUE OF STUDENTS

FOR THE YEAR BEGINNING SEPTEMBER 21, 1892.

## GRADUATE STUDENTS.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
ASHER ATKINSON, C.E., Rutgers Scientific School. <i>Astronomy.</i>	New Brunswick,	11 Hardenbergh St.
JAMES ALBERT KELSEY, B.S., Iowa Agricultural College. <i>Botany.</i>	Dunlap, Ia.,	64 College Ave.
FRANK LINCOLN STEVENS, B.L., Hobart College. <i>Botany.</i>	Syracuse, N. Y.,	Highland Park.

## SENIOR CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
HENRY CHARLES CUSSLER,	Catskill, N. Y.,	18 Hertzog Hall.
PAUL WINFRED GEYER,	New York City.	134 Winants Hall.
HENRY HARRINGTON JANEWAY,	New Brunswick.	192 Livingston Ave.
FRANK MALVEN,	Port Jervis, N. Y.,	Delta Phi House.
ROBERT DODGE MERRILL,	New Brunswick,	72 Easton Ave.
ISAAC MESSLER,	White House,	Delta U. House.
LOUIS HOWELL METILER,	East Millstone,	Delta Phi House.
BURTON STEARNS PHILBROOK,	Jersey City,	147 College Ave.
FRANCIS BAIRD SANFORD,	Warwick, N. Y.,	61 Winants Hall.
ALBERT HENRY SCHLIEDER,	West Leyden, N. Y.,	62 Winants Hall.
HOBART EARL STUDLEY,	Hudson, N. Y.,	19 Hertzog Hall.
CHARLES EDWARD TINDELL,	New Brunswick,	214 Townsend St.
ISAAC J. VAN HEE,	Pultneyville, N. Y.,	21 Hertzog Hall.
FRANK M. VAN ORDEN,	Spring Valley, N. Y.,	Delta U. House.
ELLIS ROBERT WOODRUFF,	New Brunswick,	Delta U. House.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
REGINALD BRIANT ALLEN,	Medford,	Chi Psi Lodge.
CHARLES STORR CHAMBERLAIN,	Madanapalle, India,	Delta U. House.
HORACE MUNSON DECKER,	Newark,	Newark.
PHILIP BEVIER HASBROUCK, JR.,	Libertyville, N. Y.,	Chi Psi Lodge.
JOSEPH ALLEN HEADLEY,	Union, Union Co.,	186 Winants Hall.
JAMES WALLACE HIGGINS,	Roselle,	90 Winants Hall.
PHILIP LINDSEY,	Raritan,	66 Winants Hall.
CHARLES EDGAR LOVEJOY,	Elizabeth,	Elizabeth.
RICHARD SWANN LULL,	Trenton,	Chi Psi Lodge.
WILLIAM GEORGE MCKNIGHT,	Washington, D. C.,	20 Winants Hall.
DANIEL HERBERT McLAURY,	New Brunswick,	342 George St.
FRANK WILBUR REMSEN,	Blackwell's Mills,	Hertzog Hall.
EZRA FRED SCATTERGOOD,	Columbus,	90 Winants Hall.
HARRY NOE SELVAGE,	Summit,	Chi Psi Lodge.
*CLIFFORD STOCKTON SHAW,	Hyde Park, N. Y.	
RICHARD STORMS,	Woodcliff,	185 Winants Hall.
VREELAND TOMPKINS,	Jersey City,	Delta Phi House.
HENRY FRANCIS TWITCHELL,	Newark,	Chi Psi Lodge.
CHARLES HENRY EARL UTTER,	Newark,	Newark.
HERBERT METTLER WALDRON,	New Brunswick,	417 George St.
HOWARD VAN DEVENTER WALDRON,	New Brunswick,	417 George St.

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\*Died February 22d, 1892.

## JUNIOR CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
FREDERICK JACOB BARNY,	Bardonia, N. Y.,	33 Hertzog Hall.
WILLIAM EDGAR COMPTON,	New Brunswick,	204 Somerset St.
FRANKLIN RICHMOND CUSHMAN,	Glocester, R. I.,	Franklin Park.
HOLMES VAN MATER DENNIS, JR.,	Freehold,	102 Winants Hall.
CHARLES MORISON DIXON,	New Brunswick,	87 New St.
ARTHUR EUGENE FIELD,	New Marlboro, Mass.,	45 Hertzog Hall.
FREDERICK CHRISTOPHER GRANT,	Plainfield,	Plainfield.
FREDERICK NELSON JACOBUS,	Newark,	Newark.
WILLIAM BOTSFORD JUDD,	Cranford,	Chi Psi Lodge.
EDGAR IRELAND MCCULLY,	Little Falls,	25 Hertzog Hall.
HENRY MILLER,	New Brunswick,	117 Throop Ave
OTTO LEOPOLD FREDERICK MOHN,	Beverly,	Delta Phi House.
EDMUND PHILIP NISCHWITZ,	Warrenville,	180 Winants Hall.
JOHN AUGUSTUS SARLES,	Stelton,	Stelton.
PHILIP COOK THOMAS,	New Brunswick,	48 Lee Ave.
JOHN HENRY THOMPSON,	New Brunswick,	Delta U. House.
IRVING S. TOMPKINS,	Boonton,	42 Guilden St.
FRANCIS CUYLER VAN DYCK, JR.,	New Brunswick,	84 College Ave.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
LEWIS AUGUSTUS ADAMS,	Lower Bank,	College Farm.
CHARLES FERDINAND BERGER,	Newark,	130 Winants Hall.
BREGEN DAVIS,	White House Station,	Delta U. House.
HOWARD DE MOTT,	Hackensack,	Delta U. House.
JOHN VAN NOSTRAND DORR,	Orange,	Zeta Psi House.
ABRAHAM CHARLES FOX,	Hurffville,	130 Winants Hall.
MOUNT DE BOW GRAVATT,	Clarksburgh,	College Farm.
DANIEL HAND,	Cape May C. H.,	118 Winants Hall.
HOWARD GODFREY HARRIS,	Bakersville,	54 New St.
RAYMOND STEELE HARRISON,	Verona.	183 New St.
WILLIAM AMBROSE KINSEY,	Newark,	Newark.
DAVID LAYTON,	Liberty Corner,	66 Winants Hall.
ISAAC ARTHUR LEE,	New Brunswick,	162 Somerset St.
CHARLES TOWNSEND LETSON,	Stelton,	Stelton.
JAMES MORRIS McCLOSKEY,	New Brunswick,	487 George St.
WARREN SMITH MITCHELL,	Vineland,	College Farm.
THOMAS FRENCH RUSSUM,	Elizabeth,	Elizabeth.
YOSHIMARO TAKATSUJI,	New Brunswick,	90 Albany St.
JAMES SCOTT THOMPSON,	Morristown,	114 Bayard St.
GEORGE EDWARD TRACY, JR.,	Bayonne City,	108 Winants Hall.
FRED BENEDICT VAN BRAKLE,	Keyport,	16 Winants Hall.
GEORGE MOREHOUSE VAN DUZER,	Warwick, N. Y.,	102 Winants Hall.
LEONARD LOVEJOY WETMORE,	Englewood,	Zeta Psi House.
MARSHALL WILLIAMS,	Blackwood,	114 Bayard St.
JOSEPH JOHNSON YATES, JR.,	Elizabeth,	Elizabeth.

## SOPHOMORE CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
WARD GAMEWELL BERRY,	Hackensack,	55 Winants Hall.
DAVID CAHART,	Rahway,	Rahway.
JOHN HAMILTON POTTER CONOVER,	New Brunswick,	218 Redmond St.
FRANK CORNELL EATON,	Ellenville, N. Y.,	116 Winants Hall.
CHARLES WESLEY GULICK,	New Brunswick,	127 Bayard St.
HENRY UNDERHILL HART,	Neshanic,	81 Winants Hall.
GEORGE JACOB JANEWAY,	New Brunswick,	192 Livingston Ave.
FREDERICK WILLIAM JOHANKNECHT,	Jamaica, N. Y.,	155 Winants Hall.
DWIGHT CHAPIN LEFFERTS,	Flatbush, N. Y.,	Zeta Psi House.
JOHN CONANT LOUD,	Brooklyn, N. Y.,	40 Winants Hall.
GEORGE SULLIVAN LUDLOW,	New Brunswick,	95 Bayard St.
ROBERT ELLISON SOARE,	Walden, N. Y.,	21 Hardenbergh St.
JOHN PROVOST STOUT,	Raritan,	87 Winants Hall.
RUSSELL VAN ARSDALE,	Paterson,	9 Hertzog Hall.
WARREN CLARK VAN SLYKE,	Kingston, N. Y.,	40 Winants Hall.
HERMAN CHARLES WEBER,	Brooklyn, N. Y.,	55 Winants Hall.

Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
LOUIS DERSY AYRES,	Bergen Point,	Chi Psi Lodge.
PHILIP SHERIDAN BAILEY,	Toms River,	95 Bayard St.
JOHN GARRETSON BLACKWELL,	Franklin Park,	95 Bayard St.
EUGENE BOBERT,	Harrington,	Delta U. House.
WILLIAM RYALL BURTIS,	Freehold,	17 Winants Hall.
JOHN HENRY CARNES,	Jersey City,	124 Bayard St.
ABRAHAM SCHUYLER CLARK,	New Brunswick,	18 Kirkpatrick St.
EDGAR STANLEY CONKLIN,	Pekin, Ill.,	Delta U. House.
CHARLES E. CONOVER,	Manalapan,	College Farm.
ALBERT HENRY DARNELL,	Mount Holly,	Zeta Psi House.
CHARLES MEIER DENISE,	Allentown,	Chi Psi Lodge.
GEORGE RAY DESHLEE,	New Brunswick,	116 Hamilton St.
FRANK FREELAND DOBBINS,	Rahway,	Rahway.
FREDERICK WILLIAMS ELLIS,	Cranford,	Cranford.
GRIFFITH HARRISON ENGLISH,	New Brunswick,	121 Paterson St.
JOHN MULFORD ENRIGHT,	Freehold,	Chi Psi Lodge.
AMOS HAINES FLAKE,	Medford,	117 Bayard St.
FRANK KINGSLEY GRANT,	Schoharie, N. Y.,	109 Winants Hall.
HENRY SEELEY HAMPTON,	Millville,	Chi Psi Lodge.
JAMES KIRTLAND HOWARD,	New Brunswick,	151 Somerset St.
IRWIN WHITE HOWELL,	New Brunswick,	63 Paterson St.
EUGENE LINDSEY HURLEY,	Rahway,	Rahway.
STANLEY WOODRUFF JONES,	Rahway,	Rahway.
ROBERT BALLANTINE LITTELL,	Setauket, L. I.,	87 Winants Hall.
GABRIEL LUDLOW,	New Brunswick,	95 Bayard St.
JAMES ARTHUR MANDEVILLE,	Newark,	Newark.
EUGENE AUGUSTUS MEACHAM,	New Brunswick,	174 Easton Ave.
CHARLES JOHNSON NEGUS,	Jersey City,	Zeta Psi House.
FRANKLIN PLEASANTS NOBLE,	Mendham,	118 Winants Hall.
WILLIAM O'CONNOR,	Paterson,	89 Albany St.
ROBERT KITCHING PAINTER,	New Brunswick,	5 Union St.
WILLIAM FRANK PARKER,	New Brunswick,	154 Hamilton St.
ROBERT STEVENS PARSONS,	Paterson,	Delta U. House.
FREDERICK HARRISON PIERSON, JR.,	Elizabeth,	Elizabeth.
WALDO BERTH ROSENCRANTZ,	Cranford,	Cranford.
CLARKSON RUMYON, JR.,	New Brunswick,	14 Union St.
IRVING EMMONS SALMON,	Boonton,	118 Winants Hall.
GEORGE F. SCULL, JR.,	Atlantic City,	118 Bayard St.
WILLIAM VAN BERGEN VAN DYCK,	New Brunswick,	84 College Ave.
ALEXANDER BROKAW WAY,	New Brunswick,	147 Bayard St.
CHARLES AUGUSTUS WECKERLY,	Atlantic City,	137 Winants Hall.

## FRESHMAN CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
HENRY WELLS BRINK,	Katsbaan, N. Y.,	24 Hertzog Hall.
WILLARD CONGER,	New Brunswick,	83 Commercial Ave.
LANE COOPER,	New Brunswick,	108 George St.
JOHN ALEXANDER CORSON,	New York City,	43 Hertzog Hall.
HORACE JACKSON CRAIG,	Churchville, Penn.,	63 Winants Hall.
FREDERICK WILLIAM DE HART,	Raritan,	78 Winants Hall.
ALFRED DRURY,	New Brunswick,	88 Livingston Ave.
JOHN LAWRENCE DURYEE,	Newark,	43 Winants Hall.
GEORGE SMOCK HOBART,	Marlboro,	77 Winants Hall.
ARTHUR FREDERICK JENNINGS,	Plainfield,	Plainfield.
JOHN EDWARD JENNINGS,	New Brunswick,	281 Hamilton St.
CHARLES GILBERT MALLERY,	Fishkill-on-Hudson, N. Y.,	24 Hertzog Hall.
EDWIN CORWIN MCKEAG,	New Brunswick,	85 Albany St.
EDWARD JAY MEEKER,	Succasunna,	19 Hertzog Hall.
LOUIS PROVOST PEEKE,	East Millstone,	East Millstone.
CHARLES SCUDDER POOL,	Somerville,	124 Winants Hall.
EDWARD TAYLOR RANDOLPH,	New Brunswick,	152 Paterson St.
WILLIAM ADDISON RANNEY,	Cortland, N. Y.,	42 Guilden St.
GEORGE MALVEN RIDGWAY,	Trenton,	Delta Phi House.
WALTER AIKMAN SHERWOOD,	Jersey City,	Delta Phi House.
FRANCIS EDWARD TILTON,	Holmdel,	22 Hertzog Hall.
CHARLES WILLARD VOORHEES,	Middlebush,	Middlebush.
JOHN BROWNLEE VOORHEES,	New Brunswick,	Highland Park.



## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JOSEPH GEORGE BAUER,	New Brunswick,	196 Neilson St.
FREDERICK CHARLES BAUM,	Freehold,	9 Winants Hall.
FRANK THORN BLAKE,	Madison,	58 Winants Hall.
STEPHEN DUYEA BOGARDUS,	Montrose, N. Y.,	182 Winants Hall.
WILLIAM COOK BRYAN,	Toms River,	144 Welton St.
WESLEY WARNER BURDEN,	New York City,	63 Winants Hall.
ELVIN CARRENS BURTIS,	Asbury Park,	2 Winants Hall.
CLARENCE WOODRUFF BYRAM,	Morristown,	12 Winants Hall.
WILLIAM PIERSON CARTER,	Springfield,	121 Winants Hall.
WALTER KNICKERBOCKER CAVILEER,	Lower Bank,	110 Winants Hall.
ARTHUR MORGAN CLARK,	New Brunswick,	89 Bayard St.
EDWIN SKELLINGER COOPER,	Asbury Park,	121 Winants Hall.
GEORGE DUNN CORNISH,	Gillette,	84 Winants Hall.
FREDERICK NEWTON CROWELL,	South Orange,	107 Somerset St.
HOWARD NOTT DOUGHTY,	Englewood,	80 Winants Hall.
PAUL KIRK DOUGLAS,	Newark,	Newark.
ISAAC NEVIUS ENTARD,	New Brunswick,	106 Albany St.
IRVIN FISHER,	Middlebush,	Middlebush.
REKURIES BEATTY FITHIAN,	Bridgeton,	140 Winants Hall.
ALANSON McDOWELL GRAY,	Elizabeth,	Elizabeth.
JOHN LATHROP GRAY,	Elizabeth,	Elizabeth.
ALFRED COOKMAN GREGORY,	Trenton,	Trenton.
CHRISTOPHER ARTHUR HIBLER,	Morristown,	12 Winants Hall.
SPENCER LITTLEFIELD HIGGINS,	Roselle,	Roselle.
WILLIAM ROGERS HOGG,	Toms River,	144 Welton St.
JOHN BENJAMIN HOLDING, JR.,	Bayonne City,	Bayonne City.
WALTER THOMAS HUBBARD,	Asbury Park,	9 Winants Hall.
JOHN FINNEY HUNT,	Stockton,	52 Oliver St.
LESTER INGLIS,	Paterson,	73 Winants Hall.
GEORGE ELBERT JACKSON,	Brooklyn, N. Y.,	117 Winants Hall.
WILLIAM ISAAC KER,	Asbury Park,	58 Winants Hall.
ANDY FREDERICK KILMER,	New Brunswick,	17 Codwise Ave.
THOMAS HERBERT LETSON,	New Brunswick,	Voorhees Station.
LEE DE HART LINDLEY,	New Brunswick,	24 Liberty St.
HERBERT ARTHUR LUSTER,	Elizabeth,	Elizabeth.
FRANK CONOVER MANLEY,	New Brunswick,	12 Easton Ave.
FRANK LEAMING MANNING,	Red Bank,	11 Winants Hall.
HENRY MARELLI,	Paterson,	34 Winants Hall.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
BARTHOLOMEW FRANCIS MONAGHAN,	Newark,	Newark.
LIVINGSTON PEARNE MOORE,	Elizabeth,	Elizabeth.
DANIEL MORRISON,	New Brunswick,	151 French St.
GEORGE SHELDON MOWER,	Katsbaan, N. Y.,	College Farm.
ROBERT CARTER NICHOLAS,	New Brunswick,	Clifton Ave.
JAMES BRYAN NOE,	Elizabeth,	Elizabeth.
GEORGE WINFIELD NUTTMAN,	Newark,	2 Winants Hall.
CULLEN WARNER PARMELEE,	Ocean Grove,	121 Winants Hall.
ROBERT MATTHEWS PIERSON,	Elizabeth,	Elizabeth.
JOHN FRANCIS POST, JR.,	Riverdale,	14 Hertzog Hall.
CHARLES ANSON POULSON,	Mendham,	34 Winants Hall.
IRVING LEE REED,	Atlantic Highlands,	147 Bayard St.
ALLISON BURTON ROOME,	Butler,	105 Winants Hall.
PAUL SCHUREMAN,	Toms River,	114 Bayard St.
WILLIAM UNGER SMALL,	Newark,	Newark.
EDGAR DE MOTT STRYKER,	Raritan,	124 Winants Hall.
ARTHUR HENRY TEMPLE,	Boonton,	113 Winants Hall.
ALFRED PRESTON THEOBALD,	New Brunswick,	339 George St.
HENRY DE WITT TREMPER,	Kingston, N. Y.,	Chi Psi Lodge.
MATHIAS EVERETT TURNER,	Rahway,	Rahway,
WILLIAM VANDERBEEK VAN BLARCOM,	Newark,	Newark.
GABRETT VAN CLEVE,	Paterson,	78 Winants Hall.
HOWARD EDWARD VAN NESS,	Little Falls,	105 Winants Hall.
ROBERT BRADSHAW WHITAKER,	New Brunswick,	57 Livingston Ave.
HOWARD EDMUND WHITE,	Hammonton,	144 Welton St.
FRANK HARRIS WHITENACK,	Mine Brook,	66 Winants Hall.
MILLER ROYAL WHITENACK,	Newark,	Newark.
JOHN ALFRED WILSON,	Dunellen,	29 Winants Hall.
GUSTAV FREDERICK WITTIG,	New Brunswick,	16 Hardenbergh St.
WILFRED ROBERTS WOODWARD,	Trenton Junction,	34 Schureman St.
HERBERT WYCKOFF,	Freehold,	17 Winants Hall.
JESSE FREDERICK ZABRISKIE,	Cherry Hill,	110 Winants Hall.

## SPECIAL STUDENTS.

NOT CANDIDATES FOR A DEGREE.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
HAMILTON SCRYMSEER BATTIN, <i>Chemistry.</i>	Elizabeth,	Elizabeth.
ALBERT LEON BEYLIKS, <i>Sciences.</i>	Tenafly,	106 Albany St.
ALBERT HUNTINGTON CHESTER, JR., <i>Modern Languages.</i>	New Brunswick,	89 College Ave.
HORACE STILLMAN CHESTER, <i>Chemistry.</i>	Buffalo, N. Y.,	89 College Ave.
ISAAC CHRISTMAN, <i>Sciences.</i>	Camden,	34 Schureman St.
RICHARD STEVENS CONOVER, JR., <i>Agriculture.</i>	New Brunswick,	218 Redmond St.
MAURITZ FRED H. DE HAAS, <i>Sciences.</i>	Brooklyn, N. Y.,	187 Winants Hall.
JOSEPH MILLSPAUGH FOWLER, <i>Classics.</i>	Walden, N. Y.,	Delta U. House.
CHARLES SEWARD JOHNSON, <i>Classics.</i>	New Brunswick,	214 Hale St.
JOSEPH AUGUSTUS JOHNSTON, <i>Classics.</i>	Flatbush, N. Y.,	43 Hertzog Hall.
GEORGE BROWN SCHENCK, <i>Classics.</i>	Neshanic,	118 Winants Hall.
AUGUSTINE DAWSON SELBY, <i>Botany.</i>	Columbus, O.,	64 College Ave.
HENRY JULIUS AUGUSTUS SPELKER, <i>Classics.</i>	Wynantskill, N. Y.,	18 Hardenbergh St.
WILLIAM HARVEY STILSON, <i>Chemistry.</i>	Bayonne City,	Zeta Psi House.
THOMAS MORRIS STRONG, <i>Classics.</i>	Flatbush, N. Y.,	Zeta Psi House.
MICHAEL JOSEPH TIERNEY, <i>Chemistry.</i>	East Millstone,	East Millstone.
DAVID HIGGINS TOWNLEY, <i>Sciences.</i>	Elizabeth,	Zeta Psi House.
THEODORE WILLIAM RUDOLPH VAN HET LOO, <i>Classics.</i>	Paterson,	76 Winants Hall.
HENRY MACKENZIE WHITAKER, <i>Sciences.</i>	New Brunswick,	57 Livingston Ave.
JOHN WILLS, <i>Sciences.</i>	Stanhope,	81 Winants Hall.

## SUMMARY.

	<i>Classical.</i>	<i>Scientific.</i>	<i>Total.</i>
Graduate Students.....	0	8	8
Seniors.....	15	20	35
Juniors.....	18	25	43
Sophomores.....	16	41	57
Freshmen.....	23	70	93
Special Students.....	8	12	20
Totals.....	80	171	251

## CLASSICAL DEPARTMENT.

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**1. ADMISSION.**

Examinations for admission to the College will be held on the Friday and Saturday preceding Commencement week, June 16th and 17th, 1893, beginning at 10 o'clock Friday morning. Applicants for admission may also be examined on Tuesday, September 19th, at 10 A. M. Students are advised to be present for examination in June.

From certain preparatory schools of approved standing, students are admitted upon the Principal's certificate.

Examinations for admission are both written and oral.

Candidates for admission to advanced classes must sustain a satisfactory examination upon the subjects previously studied by the class which they propose to enter, as well as upon those required for admission into the Freshman Class. Under this regulation, students are admitted at any time during the collegiate year.

Students who desire to pursue selected branches of study may do so, if properly prepared to pursue them with the regular classes. Special provision is made for such students in the Scientific Department. All such students are required to take examinations with the class with which they study, and sufficient work must be taken to occupy fully the student's time.

It is expected that students who present themselves will

be prepared, by careful study and by reviews of their work, to pass successfully a thorough examination on the subjects which are required.

Only such students are admitted with conditions as are, in the opinion of the examiners, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class.

Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that all entrance conditions will be made up before the Thanksgiving recess.

**SLOAN PRIZES FOR THE BEST ENTRANCE EXAMINATIONS,  
CLASSICAL COURSE.**

A FIRST PRIZE OF ONE HUNDRED DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills; and a SECOND PRIZE OF FIFTY DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills, established in 1883 by Hon. Samuel Sloan, of New York, a member of the Board of Trustees, will be awarded to the students who shall be adjudged by the examiners to have passed the best examination among the applicants for admission to the Freshman Class, in 1893. The cash prizes will be awarded, one-half at matriculation and one-half at the end of the second term of the Freshman year. The scholarship funds will be applied to cancel term bills for tuition during the course, and will be forfeited if the student's general average on the work of the year falls below 80 on a scale of 100.

## REQUIREMENTS FOR ADMISSION.

The following, or a full equivalent, are the requirements for admission to the Freshman Class:

## 1. LATIN.

Allen and Greenough's, or Andrews and Stoddard's, or Gildersleeve's, or Harkness' Latin Grammar, including the principles of Prosody.

Jones' Latin Composition, or the first forty-four sections of Arnold's Latin Prose Composition, or an equivalent.

Cæsar, four Books of the Gallic War.

Sallust, Catiline.

Vergil, Æneid, six Books.

Cicero, seven orations, of which it is recommended that the orations for the Poet Archias, on the Manilian Law, and for Marcellus, shall be three.

The Fifth Book of Cæsar's Gallic War may be substituted for Cicero's oration for Marcellus.

Questions on the subject-matter, the history, the geography and the mythology involved in the Latin read. *Students will be tested in reading "at sight" easy Latin (e. g., Cæsar, Sallust, Cicero, Quintus Curtius); and a map of Italy, to be drawn from memory, at the examination, will be required, together with familiarity with the classical geography of Gaul and Spain; and Smith's Smaller History of Rome (or an equivalent history of this period) to the time of the Empire.*

In preparing in Latin, the student should give close attention to the regular prose constructions of the language, and especially, in reading Cæsar or Sallust, to the forms of "indirect discourse." He should be thoroughly drilled in the use and the force of the moods and tenses, the consecution of tenses, the gerundive construction, etc., and should be taught to *analyze the sentence into subject and predicate, and the words, phrases or clauses which modify the subject and the predicate.* There should be frequent "Anticipatory Parsing."

The student should have as much exercise in writing Latin as possible. From the first, exercises in rendering English into Latin, both orally and in writing, are earnestly recommended.

The system of pronunciation followed is the Roman. For correctness of pronunciation, the rules of quantity are necessary to those who have not been thoroughly accustomed to the correct sound of the Latin words.

## 2. GREEK.

Hadley's or Goodwin's Greek Grammar, including the principles of Prosody, and of Accentuation.

Xenophon's Anabasis, three books, or an equal amount of Goodwin's Greek Reader.

Whiton's First Greek Book, entire; and Jones' Exercises in Greek Composition or Alinson's Greek Prose, entire.

Homer, The Iliad, three books (omitting the catalogue of the ships).

Questions on the subject-matter, etc., as above.

*Greek History will be required, Smith's Smaller History of Greece, or an equivalent: students will be tested at the entrance examinations in reading at sight easy Greek prose; and a map of Greece, with a good knowledge of the geography of the Greek Islands and of Asia Minor, will be required.*

The applicant must be thoroughly familiar with the leading principles of the whole Grammar, including accent, quantity and prosody.

In pronunciation, the accent must be followed in prose; but in poetry, regard will be had only to quantity.

Work done in reading other authors than those named in the requirements will be accepted, provided the pupil can pass upon a full equivalent.

## 3. MATHEMATICS.

Arithmetic complete, including the Metric System.

Algebra through Quadratic Equations, including Radicals; or the first fifteen chapters of Bowser's College Algebra.

Plane Geometry, four books of Bowser's, or an equivalent, including Exercises.

Careful attention should be given to the exercises in Geometry, as they greatly aid in acquiring readiness in geometrical reasoning.

Attention is especially called to the Metric System of Weights and Measures, a practical knowledge of which is indispensable, since it is used in the class-room; and to the essential importance of a thorough preparation in the elements of Algebra, on which subsequent success in Mathematics so much depends. The mistake is often made of passing too hurriedly over the first few chapters of Algebra. The whole book will be more quickly and surely mastered if the first part be studied slowly and thoroughly, with frequent reviews.

In preparing in Mathematics, the student should acquire a proficiency and readiness in the application of the principles; and to that end the careful solution of numerous and varied examples is earnestly recommended. It is also desirable to cultivate habits of neatness and order in the presentation of work on the blackboard or on paper.

## 4. THE ENGLISH BRANCHES.

History of the United States (Johnston's History of the United States).

Candidates for admission are examined in the History of the United States, with special reference to the colonization of the several States, the forms of government which existed previous to the War for Independence, the causes and principal events of that war, the period of the Confederation, the establishment of the Federal Constitution, with the general history subsequent to that event.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

Geography.

English Grammar.

Spelling.

A short English Essay is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1893, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Scott's *Lady of the Lake*; Shakespeare's *Winter's Tale*; Irving's *Sketch Book*; Tennyson's *Idylls*.

In 1894, students should be familiar with Shakespeare's *Julius Cæsar* and *Merchant of Venice*; Scott's *Lady of the Lake*; Longfellow's *Courtship of Miles Standish*; Scott's *Ivanhoe*; Kingsley's *Westward Ho!*

## 5. MODERN LANGUAGES.

In June, 1893, and thereafter, the elements of German Grammar will be required.



## 2. COURSE OF INSTRUCTION.

The Course of Instruction occupies four years, with three terms in each year.

The following is a scheme of the studies of the course. While it is subject to change in details, it exhibits the amount of work required of students during the four years, and indicates to candidates for advanced standing the equivalents which will be accepted from them. All the studies of the Freshman and Sophomore years are prescribed, and are intended to be of such a character as will furnish the sound basis of a liberal education, whatever profession or career is subsequently chosen. During the Junior and Senior years, certain subjects are prescribed for all candidates for a degree, while other subjects are arranged in elective courses.

The arrangement of these courses is a result of a recent careful revision of the curriculum, and is designed not only to carry further the general training of the student in the liberal arts, but also to promote his purpose to fit himself for the special occupation or profession which he may afterward follow.

The student makes his choice at the end of the Sophomore year, and the course then chosen is to be pursued in connection with the prescribed studies throughout the last two years.

## FRESHMAN CLASS.

*Exercises during each term of the year in Composition, Declamation and  
Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. LATIN.—Livy; Oral and Written Composition.....	4
2. GREEK.—Homer's Odyssey; Herodotus; Hesiod; Alinson's Greek Prose Composition, Part III.....	4
3. MATHEMATICS.—Bowser's Algebra, from Chapter XVII.....	4
4. ENGLISH LITERATURE.—History of the English Language.....	2
5. PHYSIOLOGY.—Comparative Biology; Lectures; Physiology, Martin..	1
6. CIVICS.....	1

## SECOND TERM, THIRTEEN WEEKS.

1. LATIN.—Cicero, De Amicitia; Horace, Odes; Composition; Latin Synonymes.....	5
2. GREEK.—Xenophon's Memorabilia; Pausanias; Anacreon; Sidg- wick's Greek Prose Composition.....	5
3. MATHEMATICS.—Bowser's Algebra, completed; Bowser's Geometry....	3
4. RHETORIC.—Clark; Lectures; Essays.....	2
5. ZOOLOGY.—Comparative Anatomy; Lectures; Physiology, Martin....	1

## THIRD TERM, TEN WEEKS.

1. LATIN.—Horace; Odes, Epodes, Ars Poetica.....	4
2. GREEK.—Lucian; Demosthenes' Olynthiacs; Buchholz's Greek Anth- ology, Part I.; Sidgwick's Greek Prose Composition.....	4
3. MATHEMATICS.—Bowser's Geometry, completed.....	4
4. BOTANY.—Gray.....	2
5. ENGLISH LITERATURE.—History of English Literature, Melklejohn....	2

SOPHOMORE CLASS.

*Exercises throughout the year in Composition, Declamation and Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

FIRST TERM.

Hours a week.

1. LATIN.—Terence, Andria; Pliny's Letters.....	3
2. GREEK.—Plato's Apology and Crito; Euripides' Medea; Extracts from Macaulay's Essays, and Coleridge's Aids to Reflection, to be rendered into Greek.....	3
3. INORGANIC CHEMISTRY.—Lectures, with Experiments, Remsen.....	4
4. MATHEMATICS.—Plane and Spherical Trigonometry, Bowser.....	3
5. GERMAN.—Whitney's Brief German Grammar.....	3

SECOND TERM.

1. LATIN.—Tacitus, Selections from Annales and Historiae.....	3
2. GREEK.—Thucydides, Narrative Extracts; Sophocles' Oedipus Rex; Extracts from Motley and Prescott, to be translated into Greek....	3
3. MATHEMATICS.—Bowser's Analytic Geometry.....	3
4. HISTORY.—Fisher.....	4
5. GERMAN.—German Reader.....	3

THIRD TERM.

1. LATIN.—Terence or Plautus; Catullus. ....	3
2. GREEK.—Plato's Protagoras; Aristophanes' Birds, Knights; Extracts from Irving's Sketch Book, and The Spectator, for translation....	3
3. MATHEMATICS.—Bowser's Analytic Geometry.....	3
4. HISTORY.—Fisher.....	4
5. GERMAN.—Classic Authors.....	3

## JUNIOR CLASS.

*Exercises throughout the year in Composition, Original Declamation and  
Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

## PRESCRIBED STUDIES.

	FIRST TERM.	Hours a week.
1. FRENCH.—Whitney's Brief French Grammar.....	3	
2. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy, and Lectures; Essays on Metaphysical Subjects.....	5	
3. PHYSICS.—Ganot; Lectures .....	2	
<b>SECOND TERM.</b>		
1. FRENCH.—Keetel's Analytical French Reader.....	3	
2. LOGIC.—Jevons-Hill's Logic.....	2	
3. PHYSICS.—Ganot; Lectures .....	2	
4. ASTRONOMY.—Young's Elements.....	3	
<b>THIRD TERM.</b>		
1. FRENCH.—Classic Authors.....	3	
2. PHYSICS.—Ganot; Lectures.....	2	
3. HISTORY OF CIVILIZATION.—Guizot; Essays.....	5	

## SENIOR CLASS.

*Exercises throughout the year in Composition, Original Declamation and  
Extempore Speaking. Bible-Class and Sermon, Sunday morning.*

## PRESCRIBED STUDIES.

	FIRST TERM.	
1. POLITICAL ECONOMY.—Walker and Perry; Lectures; Essays.....	4	
2. GEOLOGY.—Geikie .....	3	
3. FINE ARTS.—Lectures.....	1	
<b>SECOND TERM.</b>		
1. CONSTITUTIONAL LAW.—Cooley; Lectures; Essays.....	4	
2. ETHICS.—English Bible; Manual on Evidences, Row.....	3	
3. FINE ARTS.—Lectures.....	1	
<b>THIRD TERM.</b>		
1. INTERNATIONAL LAW.—Lectures.....	4	
2. PRACTICAL ETHICS.—Hopkins' Law of Love .....	2	
3. MINERALOGY. ....	2	
4. FINE ARTS.—Lectures.....	1	

## JUNIOR AND SENIOR CLASSES.

### ELECTIVE STUDIES.

The choice of an Elective Course, two subjects, is made at the end of the Sophomore year, and these subjects are pursued throughout the Junior and Senior years in addition to the prescribed schedule of studies.

#### I. COURSES OF ELECTIVE STUDIES.

1. Course in Ancient Languages—Latin and Greek.
2. Course in Modern Languages—English, French and German.
3. Course in Mathematics and Science.
4. Course in History and Philosophy.

The recitation schedule will be so arranged that students may elect, instead of one of the above courses, any one of the following :

#### II. GROUPS OF ELECTIVE STUDIES.

- |                              |                                     |
|------------------------------|-------------------------------------|
| 1. Latin and English-French. | 9. Greek and Philosophy.            |
| 2. Latin and Mathematics.    | 10. English-French and Mathematics. |
| 3. Latin and Science.        | 11. English-French and History.     |
| 4. Latin and History.        | 12. German and Mathematics.         |
| 5. Latin and Philosophy.     | 13. German and Science.             |
| 6. Greek and English-French. | 14. German and History.             |
| 7. Greek and German.         | 15. German and Philosophy.          |
| 8. Greek and Science.        | 16. Mathematics and Philosophy.     |
|                              | 17. Science and History.            |

Students choosing Science may still further elect to pursue—

1. Chemistry during the Junior year, with Physics during the Senior year.
2. Chemistry during the Junior year, with Biology during the Senior year.
3. Chemistry during the Junior year, with Geology and Mineralogy during the Senior year.
4. Biology during the Junior year, with Botany and Entomology during the Senior year.

Students electing the Course in Modern Languages will pursue German throughout the Junior and Senior years, English throughout the Junior year, and French throughout the Senior year.

## JUNIOR CLASS.

## ELECTIVE STUDIES.

1. *Course in Ancient Languages—Latin and Greek throughout the year.*

FIRST TERM.		Hours a week.
1. LATIN.—Roman Oratory; Selections from the Rhetorical Essays of Cicero, and from Quintilian.....		3
2. GREEK.—Demosthenes and Æschines on the Crown; Æschylus' Persæ; Euclid; Wilkins' Greek Prose Composition; Jelf's Greek Grammar, Vol. II.; Syntax; Extracts from Pilgrim's Progress, for translation.....		3

SECOND TERM.		
1. LATIN.—Roman Philosophy; Selections from the Philosophical Essays of Cicero, and from Seneca and Lucretius.....		3
2. GREEK.—Thucydides, Speeches; Aristophanes' Clouds, Frogs, Wasps; Extracts from Swift, Sterne, Thackeray and Montaigne, for translation.....		3

THIRD TERM.		
1. LATIN.—Roman Law; Antejustinianian text; Bruns, <i>Fontes Iuris Romani</i> ; Huschke, <i>Iurisprudentiæ Anteiustinianæ Quæ Supersunt</i> ; Historical Development of the System.....		3
2. GREEK.—Plato, Republic; Pindar; Chrysostom, Homilies; Extracts from Butler's Analogy, and Pascal, Pensees, for translation.....		3

## SENIOR CLASS.

## ELECTIVE STUDIES.

1. *Course in Ancient Languages—Latin and Greek throughout the year.*

FIRST TERM.		
1. LATIN.—Roman Law under the Justinianian Redaction; The Institutes of Justinian, edited as a Recension of the Institutes of Gaius by T. E. Holland; Outlines of Roman Law, Morey.....		4
2. GREEK.—Aristotle, Organon; Parmenides; Xenophanes; Christian Hymns; Extracts from the Logical works of Mill and Hamilton, for translation.....		4

SECOND TERM.		
1. LATIN.—Roman Law; The Digest; Introduction to Justinian's Digest, Roby; Selected Titles, Holland and Shadwell; Christian Latin; Latin Fathers and Hymns.....		4
2. GREEK.—Aristotle, Metaphysics; Plato, Parmenides; Theophrastus, Sappho; Greek Epigrams; Menander; Extracts from Kant's Kritik, and Schopenhauer's Die Welt als Wille und Vorstellung, for translation into Greek.....		4

THIRD TERM.		
1. LATIN.—Roman Topography and Archaeology; Shumway's "A Day in Ancient Rome;" Illustrated Lectures.....		4
2. GREEK.—Plato, Timæus; Aristotle, De Anima; Lycophron's Alexandra; Heraclitus, Fragments; Extracts from Bacon's Novum Organum and Whewell's History of the Inductive Sciences, for translation.....		4

JUNIOR CLASS.

ELECTIVE STUDIES.

2. *Course in Modern Languages—English and German throughout the year.*

FIRST TERM.

Hours a week.

- |   |   |
|---|---|
| 1. ENGLISH.—Poetics; Milton .....   | 3 |
| 2. GERMAN.—Wilhelm Tell, or another play of Schiller; German Prose Composition and Conversational German throughout the Junior and Senior years ..... | 3 |

SECOND TERM.

- |  |   |
|--|---|
| 1. ENGLISH.—The English Drama; Shakespeare .....           | 3 |
| 2. GERMAN.—FAUST, Part I., or another play of Goethe ..... | 3 |

THIRD TERM.

- |   |   |
|---|---|
| 1. ENGLISH.—Sweet's Anglo-Saxon Primer; Chaucer .....           | 3 |
| 2. GERMAN.—Minna von Barnhelm, or another play of Lessing ..... | 3 |

SENIOR CLASS.

ELECTIVE STUDIES.

2. *Course in Modern Languages—French and German throughout the year.*

FIRST TERM.

- |   |   |
|---|---|
| 1. FRENCH.—The Classic Drama; Corneille; Moliere; Histoire de la Littérature Française; Composition and Conversational French throughout the year ..... | 4 |
| 2. GERMAN.—German Literature. Scherer, with lectures. The classroom work will be conducted entirely in German during the Senior year .....              | 4 |

SECOND TERM.

- |   |   |
|---|---|
| 1. FRENCH.—Old French; Grammar; Phonology; Chanson de Roland. | 4 |
| 2. GERMAN.—Middle High German; Grammar; The Niebelungen Lied. | 4 |

THIRD TERM.

- |   |   |
|---|---|
| 1. FRENCH.—The Novel of the Romantic School, Hugo; Balzac; Merimee; Sand; Lyric Poetry at sight ..... | 4 |
| 2. GERMAN.—Sight Reading of the German Lyric Poetry, with German Essays in literary criticism .....   | 4 |

### JUNIOR CLASS. ELECTIVE STUDIES

*3. Course in Mathematics and Science—Mathematics and Chemistry, or Biology, throughout the year.*

FIRST TERM.	Hours a week.
1. MATHEMATICS.—Differential and Integral Calculus, Bowser.....	3
2. SCIENCE.—a. Chemistry.—Experimental Chemistry; Blowpipe Analysis.....	3
b. Biology.—General Biology and Invertebrate Zoology.....	3
SECOND TERM.	
1. MATHEMATICS.—Differential and Integral Calculus, Bowser.....	3
2. SCIENCE.—a. Chemistry.—Qualitative Analysis.....	3
b. Biology.—Invertebrate Zoology.....	3
THIRD TERM.	
1. MATHEMATICS.—Method of Least Squares: Introduction to Mathematical Astronomy.....	3
2. SCIENCE.—a. Chemistry.—Qualitative Analysis, completed; Quantitative Analysis.....	3
b. Biology.—Botany and Entomology.....	3

### SENIOR CLASS. ELECTIVE STUDIES

*3. Course in Mathematics and Science—Mathematics and Physics, or Biology, or Botany and Entomology, or Geology and Mineralogy, throughout the year.*

FIRST TERM.	
1. MATHEMATICS.—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures.....	4
2. SCIENCE.—a. Physics.—Mechanics; Light; Laboratory Practice.....	4
b. Biology.—General Biology and Invertebrate Zoology.....	4
c. Geology and Mineralogy.....	4
d. Botany and Entomology.—Embryology; Osteology.....	4
SECOND TERM.	
1. MATHEMATICS.—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures.....	4
2. SCIENCE.—a. Physics.—Heat; Electricity; Laboratory Practice.....	4
b. Biology.—Invertebrate Zoology.....	4
c. Geology and Mineralogy.....	4
d. Botany and Entomology.—Histology; Anatomy and Physiology; Lectures; Laboratory Practice.....	4
THIRD TERM.	
1. MATHEMATICS.—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures.....	4
2. SCIENCE.—a. Physics.—Electricity; Sound; Laboratory Practice.....	4
b. Biology.—Botany and Entomology.....	4
c. Geology and Mineralogy.....	4
d. Botany and Entomology.....	4



JUNIOR CLASS.

ELECTIVE STUDIES.

*4. Course in History and Philosophy.*

FIRST TERM.

Hours a week.

- |   |   |
|---|---|
| 1. HISTORY.—The Periods of the Renaissance and the Reformation..... | 3 |
| 2. MORAL PHILOSOPHY.—Butler's Analogy.....                          | 3 |

SECOND TERM.

- |   |   |
|---|---|
| 1. HISTORY.—The Periods of the Renaissance and the Reformation, continued.....  | 3 |
| 2. MENTAL PHILOSOPHY.—Outlines of the History of Greek Philosophy, Zeller; portions of Schwegler's History of Philosophy; Lectures; Theses..... | 3 |

THIRD TERM.

- |   |   |
|---|---|
| 1. HISTORY.—English Constitutional History.....                                   | 3 |
| 2. MENTAL PHILOSOPHY.—First and Fundamental Truths, McCosh; Lectures; Theses..... | 3 |

SENIOR CLASS.

ELECTIVE STUDIES.

*4. Course in History and Philosophy.*

FIRST TERM.

- |  |   |
|--|---|
| 1. HISTORY.—Critical Study of American History; Reports upon current Historical and Economic Literature..... | 4 |
| 2. MORAL PHILOSOPHY.....   | 4 |

SECOND TERM.

- |  |   |
|--|---|
| 1. HISTORY.—Critical Study of American History, continued; Comparative Study of Modern Constitutions; Reports upon current Historical and Economic Literature..... | 4 |
| 2. MORAL PHILOSOPHY.....   | 4 |

THIRD TERM.

- |   |   |
|---|---|
| 1. HISTORY.—Comparative Study of Modern Constitutions; Reports upon current Historical and Economic Literature..... | 4 |
| 2. ARCHITECTURE.....  | 4 |

## LATIN.

In the early part of the course in the Latin Language and Literature, the student is aided in mastering the language of the chief writers of the late Republic and early Empire.

At first, the sentence is studied analytically, regarding the value and disposition of clauses and phrases. Then the significance of particular words is sought by inspection of their derivation and by comparison with their actual synonyms. Auxiliary to both of these aims, composition, based on the text which is being read, is practiced in set written and oral exercises; and Latin questions, with extemporaneous answers in Latin, following an inductive colloquial method, are employed according to the progress of the student.

The attention of the student is directed to the differences in syntax and diction of the various periods and authors, and as his familiarity with the language increases, he is led to examine critically the author's literary characteristics. As leading writers of the Republic and early Empire, the Minor Course includes Plautus or Terence, Cicero, Catullus, Livy, Horace, Tacitus and Pliny the Younger.

In the Elective Course is offered a course in Roman Law. At first, antejustinianian text is read, with a rapid review of the historical development of the law from the Twelve Tables to Justinian, touching upon the changes produced by Prætor and Jurisconsult, and the influence of Stoicism and Christianity. Later, Justinian's Redaction is studied, with reading of the Institutes and excerpts—with at least one full title—from the Digest. The chief

object here is not to re-arrange the subject-matter into a code, but to catch the Roman Jurist's way of looking at legal questions, by following, in a general way, the order of the Institutes, supplementing that elementary work by citation of the larger works.

A course of illustrated lectures on Roman Topography and Archæology is given, treating such subjects as the Public and Private Buildings of Rome and Pompeii, the Art and Life of the Romans.

Other subjects of study may be: Roman Oratory, with the reading of Quintilian and Cicero; Roman Philosophy, with the reading of Seneca, Cicero, Lucretius; Christian Latin, with reading from Tertullian, Lactantius, Augustine and Latin Hymns.

#### GREEK.

The objects aimed at, in the order of time and attention given, are:

1. To master the grammatical structure of the language.
2. To be able to appreciate the strength and beauty of its literature.
3. To trace the influence of its thought on human culture.
4. To know the Civil History and Inner Life of its people.

In order to attain these objects the instruction during the first two years is largely to make the student acquainted with the forms of the language, and the meaning of its words, as an instrument for the expression of thought. This work is required, and is the same for all who take the

classical course. During the two subsequent years the aim will be to enable the pupil to comprehend the thought, and enter into the life of the people ; and thus avail himself, as far as possible, of all the influences which the culture of Greece has had on the world's progress. Accordingly, the elements of the language will not be taught as dead forms, but as living realities. In reproducing Greek thought, words will be considered as the counterparts of things, and the two indissolubly united.

A new language must be learned by careful attention to its forms, its syntax, and the meaning of its words before we can make it the vehicle of our thoughts. The aim is constant to reach the second stage as soon as possible. Some pupils will never reach it. But, with fair preparation for entering College, anyone of ordinary intelligence and application may reach it in the required work of the first two years. All then may become able, and those who do, and desire to profit by whatever Greek culture means, will have the opportunity, by electing this course for the two remaining years. The earlier and prescribed course must necessarily be conducted in the spirit of the Gymnasium and the old college methods. The subsequent period combines the University and Seminary systems. Two-thirds of the time on an average must be given to translation from Greek to English ; one-third from English to Greek. This alternate translation is believed to be indispensable to the mastery of any language. In pursuance of this idea there will be used such extracts from the best English writers as correspond most nearly with the style and progressive difficulty of the Greek authors read. For the earlier and

easier work, anecdotes and episodes in plain historical narrative will be selected. For the more mature scholar such extracts from the essayists, novelists, philosophic historians and metaphysicians will be chosen as give a fair synopsis of the best English style, and exhibit something from the most distinguished thinkers of other tongues. In reproducing this variety in Greek the pupil will become able to think in this language on those subjects which most nearly concern a man of culture, and to express himself as an educated Athenian did at the time the language was at its highest excellence.

The course of instruction is intended to embrace at least one complete treatise from a leading author belonging to each period, from Homer to Lucian. While the amount read is indicated by the Catalogue, it is the purpose to vary the authors, or the portions from the same author, from year to year.

Promising students are encouraged to take special courses of study, in addition to the regular class work; and private instruction is constantly given. The following books of reference are recommended: Smith's Classical Dictionaries, 6 Vols.; Jelf's and Krüger's Greek Grammars and Kühner's ausführliche griechische Grammatik; Liddell and Scott's Lexicon, 7th Oxford Edition; Grote's History of Greece, and Mahaffy's History of Greek Literature.

#### MODERN LANGUAGES.

ENGLISH LANGUAGE AND LITERATURE.—The course in English embraces, with the elective study of Anglo-Saxon,

the required study of the history of the English language and its literature, and the critical reading of English classics. A course of private reading is prescribed, upon which examinations are held. Essays in literary criticism are required during the Sophomore year. The elective study of the language and literature is pursued during the Junior year.

**GERMAN.**—German is taught three hours a week throughout the Sophomore year as a required subject. During the first term, the grammar is the main object of study, with constant practice in the translation of illustrative sentences, both from German into English and from English into German. At the same time the student is required to learn, day by day, short vocabularies of commonly-used words, for conversational drill in the classroom. In the second term easy German prose is read, both in set lessons and at sight, and in the third, selections from standard authors for careful translation and for literary analysis. It is the aim of the required course in German to give all the students a competent knowledge of the grammar, and a sufficiently large vocabulary to be able to read ordinary prose with ease, and to pursue further study by themselves without difficulty.

In the Junior and Senior years German is made one of the eight elective subjects, three hours a week throughout the Junior and four hours throughout the Senior year. The students who choose this subject are taught not only the reading knowledge of modern German, but are drilled in connected conversation and in the

study of the older periods of the language from German text-books, the instruction throughout the Senior year being given entirely in the German language.

**FRENCH.**—French is taught three hours a week throughout the Junior year as a required study. A careful phonetic analysis of the pronunciation is insisted on, and the syntax is taught historically, presupposing a thorough acquaintance with the Latin grammar. In the second term a large amount of easy prose is read, with constant practice in translation both from French into English and from English into French. In the third term the harder authors are selected and the literary form is studied as well as the language itself. The required course is intended to give to all a practical acquaintance with the language, wide enough to enable them to read ordinary French prose at sight.

In the Senior year French forms a part of one of the elective courses, being taught four hours a week to such as choose to pursue it.

#### MATHEMATICS AND ASTRONOMY.

The required studies in Mathematics include Algebra, Geometry, with problems and original exercises, Plane and Spherical Trigonometry, with their application to problems in Surveying and Navigation, and Analytic Geometry. These are the mathematical studies of the first two years.

**ELEMENTARY ASTRONOMY** is taught during the second term to all the members of the Junior Class.

The subject of mathematics may be pursued as an elective study throughout the Junior and Senior years.

Among the subjects offered in this course are the following :

Analytic Geometry of Three Dimensions.

The Differential and Integral Calculus.

The Method of Least Squares.

Introduction to Mathematical Astronomy.

Higher Mathematics.

Practical Astronomy, supplemented by observatory work and lectures.

The DANIEL S. SCHANCK OBSERVATORY is well equipped for the work of practical instruction, being supplied with a six and one-half inch equatorial refracting telescope with position micrometer, a meridian circle with four-inch object glass, sidereal time clock, barometer, a reflecting repeating circle and other instruments. It is in telegraphic connection with other observatories.

The Observatory was designed and is used not only for independent work but for the instruction of students in the theory and the use of astronomical instruments, and in practical observatory work. It affords to students unusual facilities for learning how to use astronomical instruments.

#### CHEMISTRY.

INORGANIC CHEMISTRY is taught from a text-book, and fully illustrated by lectures which demonstrate experimentally the points made in the book. The course covers the first term of Sophomore year, with exercises four hours each week. The intention is to give each student such a general knowledge of the science as every educated man



should possess. Provision is made in an elective course for those who wish to pursue the subject further.

**ELECTIVE CHEMISTRY.**—In the Junior and Senior years, students may elect a course in Analytical Chemistry with Laboratory Practice and Lectures. The experimental studies in this department have proved both attractive and profitable to those intending to devote themselves to Law or Medicine, or to business pursuits, as well as to men who intend to teach or to pursue lines of work immediately connected with chemistry and its applications.

The pupil begins by making the experiments in Remsen's Chemistry, thus acquiring by actual experience a familiarity with chemical substances and chemical phenomena.

The study of *Qualitative Analysis* is next taken up. The student makes the tests, studies the reactions, and proceeds rapidly from the analysis of simple substances to more complex. The method here followed of keeping notes of every step affords the student valuable practice in the three divisions of experimental science—Experiment, Observation and Inference. The theory of analysis is explained in the lectures and recitations on the subject. In connection with this subject, *Blowpipe Analysis* is also taught.

Students able to finish the foregoing before the end of the College year, proceed to *Quantitative Analysis*. The instruction in this subject is not so much on detail as on general principles and construction and use of apparatus. Typical salts of known composition are analyzed gravimetrically and volumetrically, and then substances requiring for their determination carefully constructed apparatus.

## MINERALOGY AND GEOLOGY.

A course of lectures in Mineralogy is given to the Senior Class, in which free use is made of the valuable mineral collections of the College, and of the private collection of the Professor in charge, which has been deposited in Geological Hall, by means of which the characteristics of the most important mineral species are illustrated and explained.

In the study of Geology a text-book is used, but each lesson is explained in advance by a short lecture, at which time suitable specimens are exhibited.

## PHYSICS.

This subject is taught by lectures, and copious additions are made to the matter of the text-book. Each point is demonstrated as far as possible; and the relations of the subject to ordinary natural phenomena, the processes of the industrial arts, etc., are pointed out. Students are encouraged to use the apparatus under the direction of the Professor in charge, and are trained to distinguish the essential from the casual conditions of experiments, as well as to infer from scientific data no more than is certain and warranted. The course begins with Mechanics and proceeds to Heat, Electricity, Sound and Light.

The apparatus is well fitted to illustrate all principles, and such additions are made to it as the industrial applications of science demand.

ELECTIVE PHYSICS.—During the Senior year of the Classical Course, Physics is an elective study.

The object of this elective is to furnish a sound, practical foundation to those who expect to engage in industrial pursuits, or in professions which demand acquaintance with the principles of Physics. The work consists of a course of laboratory exercises such as is set forth in Stewart and Gee's Practical Physics, besides many of the experiments described in the text-book used in the lecture course. The facilities of the Physical Laboratory have been greatly increased, so that all essentials are available to students.

#### BIOLOGY.

PHYSIOLOGY AND ZOOLOGY.—Required one hour a week, during the first two terms of the Freshman year. The method of instruction is by lectures and quizzes, supplemented by demonstrations from charts, specimens, dissections, and Auzoux models. The aim is to give the student a bird's-eye view of the principles of Physiology, the structure of animals, and such an acquaintance with the facts of Zoology as shall enable him later to pursue psychological and geological studies with increased profit.

GENERAL BIOLOGY.—Elective in the Junior and Senior years. The distinctive studies of the Course in Biology of the Scientific School must be chosen. The time required is three morning hours and two afternoons in the Junior year, and four morning hours and two afternoons in the Senior year. One-half of this time during the first two terms of each year will be pursued with the Professor of Biology. A detailed account of the studies of this portion of the course is given under the sub-head of General

Biology for the Scientific School. The remaining time for the Biological Elective is divided between the Professors of Botany and of Entomology.

#### BOTANY.

Students in all courses take Botany two hours a week in the Spring term of the Freshman year. Gray's "Revised Lessons" is used as the text-book in descriptive Botany, and in connection with this, the students familiarize themselves with the methods of plant analysis. Each point considered is, as far as possible, illustrated by living specimens, either grown in the laboratory for purposes of dissection or collected in the fields and forests. Students are taught the methods of preparing and mounting specimens as abundantly seen in the College Herbarium.

The work of the Junior and Senior years, required in the Courses in Agriculture and Biology, is open for election by the students of the corresponding years in all the classical courses.

#### HISTORY AND POLITICAL SCIENCE.

The study of History in the Classical Department is begun in the second term of Sophomore year with the use of a text-book as a guide. The course is planned to cover European history, in outline, from the beginning of the Empire to the outbreak of the French Revolution. The progress of the greater movements in political and social development is traced, and emphasis is laid upon the formation and growth of modern States. In this required part of the course the method of instruction is to some

extent topical, and aims to furnish information essential to good citizenship, to cultivate a habit of investigation, and to teach the student how to come to independent conclusions. Students are encouraged to use the library, are given direction in methods of historical work, and are taught the value of historical sources. A constant use of the historical atlas is required of the student throughout the prescribed courses.

For students in the Scientific Department, a corresponding course in general European history is given in the first and second terms of the Junior year. In the third term, Guizot's History of Civilization in Europe is used as a text-book by both sections of the class.

The lectures before the class and the subjects assigned for essays are intended to stimulate a desire to understand the ideas which underlie the causes of events, and which give to history its continuity and unity.

**ELECTIVE HISTORY.**—Elective courses are open to Juniors and Seniors, offering facilities for advanced and systematic work in special periods of history, and for a study of the origin and development of political institutions. The courses include both European and American history.

The method of study is by lectures and topics. It aims to cultivate a spirit of original research and places emphasis upon library investigations. For students of the Senior Class a Seminary of History and Politics is organized, in which papers embracing the results of independent original study are reported.

The following is an outline of the proposed elective courses:

## JUNIOR YEAR.

*I. The Periods of the Renaissance and the Reformation.*

The work will consist chiefly of library investigations and critical examinations of reports growing out of these investigations. The class will meet three times each week during the first and second terms.

*II. English Constitutional History.*

Instruction will be given by text-books, lectures and required readings on assigned topics. This is taken as an introduction to American History. Three times each week during the third term.

## SENIOR YEAR.

*III. Colonial History of America, followed by the Constitutional and Political History of the United States.*

The methods of instruction are in general the same as in the Junior year. It is designed to be a critical study of American history. Attention is especially given to the growth of nationality and to the development of the Constitution. Three hours during the first and second terms.

*IV. Comparative Study of the Modern Constitutions.*

In this course the Constitutions of modern European States are studied and compared with that of the United States. A part of the second and the third term, three hours each week.

*V. Seminary of History and Politics.*

This is designed for original investigations, and for reports upon the current historical and economic literature. One hour each week throughout the year.

**POLITICAL ECONOMY.**—The Senior Class, in both the Classical and Scientific Departments, receives instruction in the principles of Political Economy four hours weekly during the first term. In addition to the use of a text-book, lectures, formal and informal, are given, discussions are held, special topics are assigned to individuals for careful study, the results of which are read before the class, and essays are prepared by the class on some subject chosen from a number relating to this science.

**CONSTITUTIONAL LAW.**—The Senior Class in both departments, pursues the study of Constitutional Law four hours weekly during the Winter term. Cooley's Principles of Constitutional Law is used as a text-book. Lectures are read by the President before the class on the historical development of the Constitution and some of the more important decisions of the Supreme Court are analyzed, for example those relating to the prohibition of State laws impairing the Obligation of Contracts, the Legal Tender Cases and others of importance and paramount significance. The aim is to ground all the students in a knowledge of the elements of Constitutional Law and to give a special preparation to those about to choose the profession of the law. This is particularly kept in view in assigning the subjects for the essays which accompany the other work of the term.

**INTERNATIONAL LAW.**—This subject is taken up the last term of the Senior year. Lectures are given by the President four hours weekly. The peculiar character of this

branch of law is dwelt upon, its development, the authorities and sources, and its present status.

**CIVICS.**—The President meets the Freshman Class of both departments one hour each week for their instruction by use of text-book and lecture in the elements of Civics and the duties of the citizen.

**MORAL PHILOSOPHY, CHRISTIAN EVIDENCES AND THE  
ENGLISH BIBLE.**

During the first term the Juniors and Seniors of the Classical section have an elective course in Ethics. Butler's Analogy is studied by the Juniors, and Calderwood's Moral Philosophy by the Seniors.

In the second term the Senior elective in Moral Philosophy is continued for part of the term, the latter part being given to the study of Christian Evidences. During this term the whole Classical section of the Seniors receive instruction in the English Bible by lectures.

In the third term both sections of the Senior Class pursue the study of Practical Ethics.

**METAPHYSICS AND LOGIC.**

**MENTAL PHILOSOPHY.**—The Juniors are required to prepare five recitations a week in Porter's Elements of Intellectual Philosophy during the first term. Lectures are delivered on the brain and its connection with the mind, and on kindred topics relating to the nervous system. The results of recent critical discussions on philosophical and



metaphysical questions, together with comments, are fully interspersed through the daily recitations.

**ELECTIVE COURSE IN PHILOSOPHY.**—This course, consisting of three recitations a week, extends through the second and third terms of the Junior year. It embraces the History of Philosophical Speculation, together with lectures on the most distinguished representatives of various distinctive systems. The students are obliged to present carefully written results of their own researches on assigned subjects, in addition to the pursuit of regular text-books. It is hoped to inspire by this course such a love of high and critical thought as to lead members of the class to continue through life to make attainments in the same direction. The class-room work will consist of recitations in Zeller's Outlines of the History of Greek Philosophy, portions of Schwegler's History of Philosophy, relating to modern schools, McCosh's First and Fundamental Truths, lectures on Descartes, Leibnitz, Locke, Reid, Kant, Hegel, etc., by the Professor, and theses by the students, giving the results of their own researches along specified lines and subjects.

**LOGIC.**—Jevons-Hill's text-book is used for two recitations a week during the second term. Special care is taken to enforce a practical application of logical formulas in the resolution of arguments and the detection of sophistries. To this end, illustrative examples are drawn from different authors and much oral instruction is given.

## RHETORIC.

ELOCUTION.—The aim is to develop effective delivery in forms of expression. The scope of instruction embraces Physical Culture, Respiration, a Training of the Voice and a cultivation of the powers by which thought is analyzed and presented in synthetic expression.

RHETORIC.—In the department of Rhetoric, begun during the Freshman year, an effort is made to teach the principles of Composition, not as laid down in mechanical rules, but as springing from psychological laws and relations. Ideas presented in accordance with various mental requirements and influences are shown to contain the true philosophy of rational and effective discourse.

Illustrative references to the Masterpieces of Oratory, and to other forms of the best English Classical Literature, are freely given. Essays are required throughout the entire course.

EXTEMPORE SPEAKING.—The Bussing Prizes for excellence in extempore speaking, recently founded, are designed to cultivate the habit of presenting clearly, forcibly and accurately, and in a manner to convince an audience, the facts and ideas a student has upon themes with which he may fairly be supposed to be somewhat conversant. The repeated competition for these prizes during the four years of the College course has already produced excellent effects.

## THE FINE ARTS.

The residence of former Presidents of the College has been refitted for the uses of the Fine Arts Department of

the College, and is known as the Fine Arts Building. It contains the art collections of the College, including "The Thomas L. Janeway, M.D., Memorial Collection" of casts, and the various gifts of friends of the institution.

The pictures, models, casts and photographs are arranged to represent, as far as possible, the art of the world. A new lecture-room, having adequate facilities for illustrating lectures by the stereopticon and otherwise, is in use, and the arranging and classifying of the Museum is going forward. Acquisitions are being continually made to the Museum and every facility for illustrating the history of art is being added to the department. Besides the lectures of the Professors in charge of this department, subjects related to the fine arts will be treated from time to time by other lecturers. This year an extra course of lectures on the Fine Arts by well-known lecturers will be given during the second term, and will be open to the Juniors and Seniors.

**ARCHITECTURE**—*Professor Doolittle*.—Architecture is an elective occupying four hours a week during the third term of the Senior year. Several hundreds of views are thrown upon the screen by stereopticon in illustration of the different orders and styles of buildings that have prevailed among different nations in successive periods. Lectures accompany the views and afford also much information on statuary, painting and other fine arts connected with architecture.

**SCULPTURE**—*Professor Shumway*.—The lectures on Sculpture embrace the classical art of Greece and Rome, and

are illustrated by lantern slides, photographs, and the various casts of the Museum. By special arrangement these lectures will not be given in course this year, Professor Shumway covering substantially the same ground in the course of public lectures to be given during the second and third term.

**PAINTING—*Professor Van Dyke.***—During the second term of this year there will be for the Seniors a course of lectures on old Italian and modern French painting, covering the ground in Italy from early Christian times to the Decadence following the Renaissance, and in France from the time of Francis I. to the present day. All of these lectures will be illustrated by lantern slides of the masterpieces of painting.

#### PHYSICAL DEVELOPMENT.

**GYMNASIUM.**—The excellent Gymnasium in Suydam Hall, three minutes' walk from the College buildings, by the courtesy of the Theological Seminary of the Reformed Church, is opened to the daily use of the students of the College.

Through the liberality of Mr. Robert F. Ballantine, a member of the Board of Trustees, a gymnasium will be built during the present year. It will be amply provided with the best modern appliances for systematic physical instruction.

**ATHLETICS.**—In order to secure for the students the benefits of out-of-door exercise, athletic sports are encouraged by the provision of adequate facilities. Rightly

controlled, such sports have shown themselves beneficial both to the health of the students and to the quality of the work done, and are manifestly in the interest of good order. The more prominent athletes have been generally among the more earnest and successful students. The proper control of athletics has been secured by the organization of an incorporated athletic association, supported by the students and managed by a board of nine trustees, chiefly composed of resident alumni. In this board the Faculty has always had one or more representatives, and in this way a cordial co-operation has been steadily maintained between Faculty and students, avoiding the need for the exercise of direct authority.

**THE NEW ATHLETIC FIELD.**—By the generosity of Mr. James Neilson, of New Brunswick, an alumnus and Trustee of the College, there is now provided an athletic field containing more than five acres and at a walking distance of about eight minutes from the College campus.

About five thousand dollars have been spent in improving this field and providing proper accommodations. A commodious grand stand has been erected, with dressing-rooms and bath-rooms attached, and everything has been done to make the field as nearly perfect as possible and to render it practically useful to the students.

## SCIENTIFIC DEPARTMENT.

## RUTGERS SCIENTIFIC SCHOOL,

BY ACT OF THE LEGISLATURE CONSTITUTED THE STATE COLLEGE FOR THE  
BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS.

## BOARD OF VISITORS.

(APPOINTED BY THE GOVERNOR.)

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### 1. ADMISSION.

Every applicant for admission must be at least sixteen years of age, and must submit to the President proper testimonials of a good moral character. If an applicant for a Free State Scholarship, he must also present to the President a certificate of appointment.

Examinations for admission will be held on the same days as for the Classical Department, viz.: On the Friday and Saturday preceding Commencement week, June 16th and 17th, 1893, beginning at 10 o'clock A. M. on Friday, in the Registrar's office. Applicants for admission may also be examined on Tuesday, September 19th, at the same hour and place; but all students who can conveniently do so, are advised to be present in June.

From certain preparatory schools of established reputation students are admitted without examination, upon the Principal's certificate that they have completed the required amount of work and are prepared to enter College. Blanks for such certificates will be furnished upon application to the Registrar, Mr. IRVING S. UPSON, or to the President of the College. Students may enter an advanced class either at the beginning of the College year or at other times, if they sustain a satisfactory examination both on the preliminary studies and on those already passed over by the class which they propose to enter.

Provision is made for such students as wish to devote themselves to special subjects, if they are prepared to study

profitably with the regular classes in those subjects; but special students are required to take sufficient work fully to occupy their entire time.

### REQUIREMENTS FOR ADMISSION.

The following are the subjects in which those who wish to enter the Freshman Class of the Scientific Department are examined. Since all are such as can be acquired in our best common schools, it is insisted that the preparation in them shall be thorough and complete. The general regulations as to conditions and their removal will be the same as those which apply to the Classical Course, and may be found on page 21.

1. **ARITHMETIC.**—Fundamental Operations; Common and Decimal Fractions; Denominate Numbers, including the Metric System; Percentage, including Interest and Discount; Proportion; Square and Cube Root.

*In preparing the student for this course, it is recommended that he be drilled thoroughly in Arithmetic, as a clear understanding of its simple elementary and practical principles is essential to a good Mathematician.*

2. **ALGEBRA** through Arithmetic, Geometric and Harmonic Progressions, or the first seventeen chapters of Bowser's College Algebra.

His preparation in Algebra should be *very thorough*. In addition to understanding the **PRINCIPLES** of the science, he must fix them in his memory, and learn their bearing and utility, and for this reason he should pay great attention to the solution of practical examples. What is needed is ability to solve ordinary examples with facility and to explain them thoroughly.

Attention is specially called to the solution of Simultaneous Quadratic Equations, and of Equations of Higher Degrees than the Second, which may be reduced to the quadratic form, and then solved by the methods of solving quadratics.

3. **PLANE GEOMETRY.**—The *whole* of Plane Geometry will be required.

In June, 1894, and thereafter, the *whole* of Solid Geometry will also be required.



## 4. ENGLISH GRAMMAR—including Spelling.

A short ENGLISH ESSAY is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1893, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Scott's *Lady of the Lake*; Shakespeare's *Winter's Tale*; Irving's *Sketch Book*; Tennyson's *Idylls*.

In 1894, students should be familiar with Shakespeare's *Julius Caesar* and *Merchant of Venice*; Scott's *Lady of the Lake*; Longfellow's *Courtship of Miles Standish*; Scott's *Ivanhoe*; Kingsley's *Westward Ho!*

## 5. DESCRIPTIVE GEOGRAPHY.

## 6. PHYSICAL GEOGRAPHY.

7. HISTORY OF THE UNITED STATES.—Johnston's History of the United States, or its equivalent.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

8. PHYSICS.—Students are required to show satisfactory acquaintance with Wells' or Cooley's Natural Philosophy, or Peck's Ganot's Physics.

9. CHEMISTRY.—Such knowledge of Chemistry as may be obtained from a thorough study of Remsen's, Cooley's or Steele's Chemistry complete. Remsen's Elements of Chemistry is recommended, because Remsen's text-books are used during the course.

## 2. COURSES OF STUDY.

Five distinct courses of study are included in the schedule which follows:

- I. A COURSE IN AGRICULTURE.
- II. A COURSE IN CIVIL ENGINEERING AND MECHANICS.
- III. A COURSE IN CHEMISTRY.
- IV. A COURSE IN ELECTRICITY.
- V. A COURSE IN BIOLOGY.

During the first year the studies of the five full courses are the same, and are designed to furnish a suitable

introduction to the pursuit of the higher branches in either.

At the end of the first year students elect to pursue one of the five full courses, and for the remaining three years their studies are directed with particular reference to the choice made. Some studies which go to the equipment of the intelligent citizen, whatever his occupation, such as History (see page 45), English Literature (see page 37), Political Economy (see page 47), Political Ethics (see page 48), and others, are interspersed throughout the entire four years, in order that students may not only acquire a thorough preparation for their special pursuits in life, but may at the same time receive a liberal training which will fit them to discharge wisely and usefully the duties of good citizenship.

## FRESHMAN CLASS.

*Uniform Schedule for all Scientific Courses.*

*The Arabic numerals in light-faced type indicate the number of morning hours each week; those in bold-faced type the number of afternoon hours. Exercises throughout the year in Composition, Declamation and Extempore Speaking. Bible Class and Sermon each Sunday morning. Drill twice a week.*

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. FRENCH.—Whitney's Practical French Grammar, Part I.....	5
2. MATHEMATICS.—Algebra, completed, Bowser. Geometry, Bowser.....	5
3. PHYSIOLOGY.....	2
4. RHETORIC.—Clark: Lectures; Essays.....	2
5. ENGLISH LITERATURE.—History of the Language, Meiklejohn.....	1
6. CIVICS.....	1
7. DRAUGHTING.—Practice in use of Instruments; Geometrical Problems and Applications.....	4

## SECOND TERM, THIRTEEN WEEKS.

1. FRENCH.—Keetel's Analytical French Reader; Grammar, Part II.....	5
2. MATHEMATICS.—Geometry completed; Trigonometry, Plane and Spherical, Bowser.....	5
3. ZOOLOGY.....	2
4. ENGLISH LITERATURE.—English Literature; Meiklejohn.....	4
5. DRAUGHTING.—Plain and Colored Topography.....	4

## THIRD TERM, TEN WEEKS.

1. FRENCH.—Classic Authors.....	5
2. MATHEMATICS.—Surveying, Murray.....	5
3. BOTANY.—Gray's; Lectures.....	2
4. ENGLISH LITERATURE.—English Authors.....	4
5. DRAUGHTING.—Mapping, with Sections, etc.; Field Work.....	4

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Agriculture, Course in  
Chemistry, and Course in Biology.*

## FIRST TERM.

Hours a week.

1. EXPERIMENTAL CHEMISTRY.—Remsen (first two months).....	} 5
2. BLOWPIPE ANALYSIS.—Nason; Lectures (last month of term).....	
3. CHEMISTRY.—Remsen; Lectures, with Experiments.....	4
4. PHYSICS.—Ganot; Lectures.....	3
5. GERMAN.—Whitney's Brief German Grammar.....	3
6. ENGLISH LITERATURE.—English Authors.....	1
7. CHEMICAL LABORATORY PRACTICE.—Experimental Chemistry and Blowpipe Analysis.....	9
8. DRAUGHTING.—Practical Geometry, solid.....	2

## SECOND TERM.

1. QUALITATIVE ANALYSIS.—Fresenius; Lectures.....	5
2. CHEMISTRY.—Remsen; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—German Reader.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9
7. DRAUGHTING.—Free-Hand Drawing; Intersection and Development of Surfaces.....	2

## THIRD TERM.

1. QUALITATIVE ANALYSIS.—Fresenius; Lectures.....	5
2. CHEMISTRY.—Organic Chemistry.—Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—Scientific German.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9
7. DRAUGHTING.—Shades and Shadows; Linear Perspective, etc.....	2

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Civil Engineering and  
Mechanics and Course in Electricity*

## FIRST TERM.

Hours a week.

1. DESCRIPTIVE GEOMETRY.—Church.....	5
2. CHEMISTRY.—Remsen ; Lectures, with Experiments.....	4
3. PHYSICS.—Ganot ; Lectures.....	3
4. GERMAN.—Whitney's Brief German Grammar.....	3
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Practical Geometry, Solid.....	4

## SECOND TERM.

1. DESCRIPTIVE GEOMETRY.—Church, completed.....	} 5
2. ANALYTIC GEOMETRY.—Bowser.....	
3. CHEMISTRY.—Remsen ; Lectures, with Experiments.....	3
4. PHYSICS.—Ganot ; Lectures.....	3
5. GERMAN.—German Reader.....	4
6. ENGLISH LITERATURE.—English Authors.....	1
7. DRAUGHTING.—Free-Hand Drawing ; Intersection and Development of Surfaces, etc.....	4

## THIRD TERM.

1. ANALYTIC GEOMETRY.—Bowser, completed.....	5
2. CHEMISTRY.—Organic Chemistry ; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot ; Lectures.....	3
4. GERMAN.—Scientific German.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Shades and Shadows ; Linear Perspective, etc.....	4

## JUNIOR CLASS.

*Schedule for Course in Agriculture.*

FIRST TERM.		Hours a week.
1. AGRICULTURE.—Farm Economy.....	3+3	
2. INVERTEBRATE ZOOLOGY.....	2	
3. ELEMENTS OF MECHANISM.....	2	
4. MENTAL PHILOSOPHY—Porter's Elements of Intellectual Philosophy..	2	
5. HISTORY—Fisher.....	5	
6. MILITARY SCIENCE.....	1	
7. BIOLOGICAL LABORATORY PRACTICE.....	9	
SECOND TERM.		
1. AGRICULTURE.—Manures and Fertilizers.....	3	
2. ANATOMY OF DOMESTIC ANIMALS; VEGETABLE HISTOLOGY.....	2	
3. MINERALOGY.—Lectures.....	2	
4. MENTAL PHILOSOPHY AND LOGIC.....	2	
5. HISTORY.—Fisher.....	3	
6. ASTRONOMY.—Young's Elements.....	3	
7. BIOLOGICAL LABORATORY PRACTICE.....	6	
THIRD TERM.		
1. VEGETABLE PHYSIOLOGY.....	3	
2. ENTOMOLOGY.—Structure of Insects.....	5+6	
3. HISTORY OF CIVILIZATION.—Guizot.....	5	
4. MILITARY SCIENCE.....	2	
5. BOTANICAL LABORATORY PRACTICE.....	6	

## SENIOR CLASS.

FIRST TERM.		
1. AGRICULTURE.—Feeding Animals.....	4	
2. ENTOMOLOGY.—Systematic.....	3+6	
3. OSTEOLOGY AND EMBRYOLOGY.....	2	
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
5. GEOLOGY.—Geikie.....	2	
6. BIOLOGICAL LABORATORY PRACTICE.....	6	
SECOND TERM.		
1. AGRICULTURE.....	5	
2. AGRICULTURAL ZOOLOGY.....	2	
3. BOTANY.—Cryptogamic.....	2	
4. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	
5. GEOLOGY.—Geikie.....	2	
6. MILITARY SCIENCE.....	1	
7. BIOLOGICAL LABORATORY PRACTICE.....	6	
8. BOTANICAL LABORATORY PRACTICE.....	6	
THIRD TERM.		
1. AGRICULTURE.....	3	
2. ECONOMIC ENTOMOLOGY.....	4+6	
3. VEGETABLE PATHOLOGY.....	2+6	
4. INTERNATIONAL LAW.....	4	
5. PRACTICAL ETHICS.—Hopkins.....	2	
6. THESIS.....	...	

## JUNIOR CLASS.

*Schedule for Course in Civil Engineering and Mechanics.*

FIRST TERM.		Hours a week.
1. DIFFERENTIAL CALCULUS—Bowser .....	5	5
2. ELEMENTS OF MECHANISM.....	2	2
3. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy, .....	2	2
4. HISTORY.—Fisher .....	5	5
5. MILITARY SCIENCE.....	1	1
6. DRAUGHTING.—Lettering, etc.....	4	4
SECOND TERM.		
1. DIFFERENTIAL CALCULUS—Completed; Integral Calculus, Bowser.....	5	5
2. MINERALOGY—Lectures.....	2	2
3. MENTAL PHILOSOPHY AND LOGIC .....	2	2
4. HISTORY.—Fisher .....	8	8
5. ASTRONOMY.—Young's Elements.....	3	3
6. DRAUGHTING.—India Ink and Color Shading, etc.....	4	4
THIRD TERM.		
1. INTEGRAL CALCULUS—Completed.....	5	5
2. RAILROAD CURVES—Henck's Field Book.....	3	3
3. HISTORY OF CIVILIZATION.—Guizot .....	5	5
4. MILITARY SCIENCE.....	2	2
5. DRAUGHTING—Copying. Tracing. Blue-Print Copying, Railroad Profiles and Cross Sections; Field Work.....	4	4

## SENIOR CLASS.

FIRST TERM.		
1. MECHANICS.—Bowser.....	5	5
2. BRIDGE-BUILDING—Wood .....	4	4
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	4
4. GEOLOGY.—Geikie.....	2	2
5. DRAUGHTING.—Machinery and Architecture.....	4	4
SECOND TERM.		
1. MECHANICS.—Bowser, Completed .....	5	5
2. BRIDGE-BUILDING—Completed; Hydromechanics, Bowser.....	4	4
3. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	4
4. GEOLOGY.—Geikie.....	2	2
5. MILITARY SCIENCE.....	1	1
6. DRAUGHTING.—Graphical Statics as Applied to Bridges, etc.....	4	4
THIRD TERM.		
1. HYDROMECHANICS.—Completed.....	5	5
2. GEODESY.—Lectures.....	4	4
3. INTERNATIONAL LAW.....	4	4
4. PRACTICAL ETHICS.—Hopkins.....	2	2
5. DRAUGHTING.—Thesis.....		

## JUNIOR CLASS.

*Schedule for Course in Chemistry.*

FIRST TERM.		Hours a week.
1. QUANTITATIVE ANALYSIS.—Fresenius, Cairns; Lectures .....	2	
2. ORGANIC CHEMISTRY.—Remsen; Lectures .....	3	
3. ELEMENTS OF MECHANISM.....	2	
4. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy..	2	
5. HISTORY.—Fisher .....	5	
6. MILITARY SCIENCE.....	1	
7. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis .....	11	

SECOND TERM.		
1. ORGANIC CHEMISTRY.—Remsen; Lectures.....	4	
2. MINERALOGY.—Lectures and Crystallography.....	3	
3. MENTAL PHILOSOPHY AND LOGIC.....	2	
4. HISTORY.—Fisher.....	3	
5. ASTRONOMY.—Young's Elements .....	3	
6. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	

THIRD TERM.		
1. STOICHIOMETRY.—Foye; Lectures.....	3	
2. DETERMINATIVE MINERALOGY.....	5	
3. HISTORY OF CIVILIZATION.—Guizot.....	5	
4. MILITARY SCIENCE.....	2	
5. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	

## SENIOR CLASS.

FIRST TERM.		Hours a week.
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures .....	3	
2. PHYSICAL CHEMISTRY.—Lectures.....	5	
3. REPORTS.—Recent Chemical Literature .....	1	
4. POLITICAL ECONOMY.—Walker and Perry; Lectures .....	4	
5. GEOLOGY.—Geikie .....	2	
6. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry..	11	

SECOND TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	4	
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures .....	4	
3. REPORTS.—Recent Chemical Literature.....	1	
4. CONSTITUTIONAL LAW.—Cooley; Essays .....	4	
5. GEOLOGY.—Geikie .....	2	
6. MILITARY SCIENCE.....	1	
7. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry..	11	

THIRD TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	3	
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures.....	5	
3. REPORTS.—Recent Chemical Literature .....	1	
4. INTERNATIONAL LAW.....	4	
5. PRACTICAL ETHICS.—Hopkins.....	2	
6. THESIS.....	1	
7. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry..	11	



## JUNIOR CLASS.

*Schedule for Course in Electricity.*

FIRST TERM.		Hours a week.
1. DIFFERENTIAL CALCULUS.—Bowser.....	5	
2. ELEMENTS OF MECHANISM.....	2	
3. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy..	2	
4. HISTORY.—Fisher.....	5	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING.—Lettering, etc.....	4	
7. PHYSICAL LABORATORY PRACTICE .....	3	
SECOND TERM.		
1. DIFFERENTIAL CALCULUS.—Completed; Integral Calculus, Bowser....	5	
2. MINERALOGY.—Lectures.....	2	
3. MENTAL PHILOSOPHY AND LOGIC.....	2	
4. HISTORY.—Fisher.....	3	
5. ASTRONOMY.—Young's Elements.....	3	
6. DRAUGHTING.—India Ink and Color Shading, etc.....	4	
7. PHYSICAL LABORATORY PRACTICE .....	3	
THIRD TERM.		
1. INTEGRAL CALCULUS.—Completed.....	5	
2. PHYSICS .....	3	
3. HISTORY OF CIVILIZATION.—Guizot.....	5	
4. MILITARY SCIENCE.....	2	
5. DRAUGHTING.—Construction, Copying, Tracing, Blue-Print Copying...	4	
6. PHYSICAL LABORATORY PRACTICE .....	3	

## SENIOR CLASS.

FIRST TERM.		
1. MECHANICS.—Bowser.....	5	
2. PRACTICAL ELECTRICITY.....	4	
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
4. GEOLOGY.—Geikie.....	2	
5. DRAUGHTING.—Machinery and Architecture.....	4	
6. PHYSICAL LABORATORY PRACTICE .....	3	
SECOND TERM.		
1. MECHANICS.—Bowser, Completed.....	5	
2. THEORY OF ELECTRICITY; HYDROMECHANICS, Bowser.....	4	
3. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	
4. GEOLOGY.—Geikie.....	2	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING.—Graphical Statics, with Applications.....	4	
7. PHYSICAL LABORATORY PRACTICE .....	3	
THIRD TERM.		
1. HYDROMECHANICS.—Bowser.....	5	
2. THEORY OF ELECTRICITY.....	4	
3. INTERNATIONAL LAW.....	4	
4. PRACTICAL ETHICS.—Hopkins.....	2	
5. PHYSICAL LABORATORY PRACTICE .....	3	
6. DRAUGHTING.—Thesis.....	...	

## JUNIOR CLASS.

*Schedule for Course in Biology.*

## FIRST TERM.

Hours a week.

1. INVERTEBRATE BIOLOGY.....	5
2. ELEMENTS OF MECHANISM.....	2
3. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Philosophy..	2
4. HISTORY.—Fisher.....	5
5. MILITARY SCIENCE.....	1
6. BIOLOGICAL LABORATORY PRACTICE.....	9

## SECOND TERM.

1. VEGETABLE BIOLOGY; VERTEBRATE BIOLOGY.....	5
2. MINERALOGY.—Lectures.....	2
3. MENTAL PHILOSOPHY AND LOGIC.....	2
4. HISTORY.—Fisher.....	3
5. ASTRONOMY.—Young's Elements.....	3
6. BIOLOGICAL LABORATORY PRACTICE.....	12

## THIRD TERM.

1. EXTERNAL ANATOMY OF INSECTS; SYSTEMATIC ENTOMOLOGY; CRYPTO- GAMIC BOTANY.....	8
2. HISTORY OF CIVILIZATION.—Guizot.....	5
3. MILITARY SCIENCE.....	2
4. BIOLOGICAL LABORATORY PRACTICE.....	12

## SENIOR CLASS

## FIRST TERM.

1. SYSTEMATIC ENTOMOLOGY; OSTEOLOGY AND EMBRYOLOGY.....	9
2. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4
3. GEOLOGY.—Geikie.....	2
4. BIOLOGICAL LABORATORY PRACTICE.....	12

## SECOND TERM.

1. VEGETABLE PATHOLOGY; COMPARATIVE ANATOMY AND HISTOLOGY..	9
2. CONSTITUTIONAL LAW.—Cooley; Essays.....	4
3. GEOLOGY.—Geikie.....	2
4. MILITARY SCIENCE.....	1
5. BIOLOGICAL LABORATORY PRACTICE.....	12

## THIRD TERM.

1. INTERNAL ANATOMY OF INSECTS; ECONOMIC ENTOMOLOGY; ECONOMIC BOTANY.....	9
2. INTERNATIONAL LAW.....	4
3. PRACTICAL ETHICS.—Hopkins.....	2
4. BIOLOGICAL LABORATORY PRACTICE.....	12
5. THESIS.....	

## COURSE IN AGRICULTURE.

The object of this course is to provide a broad scientific training, which is now recognized as essential to the best life on the farm.

The major studies of this course include Applied Agriculture, Biology, Botany and Entomology.

AGRICULTURE.—In the first term, Junior year, the student is instructed in business methods, relations of weather to farming, the characteristics of the different breeds of farm animals, their care and management, and their adaptability to the various purposes and conditions, and their general economic relations.

The study of the principles of scientific agriculture and their application to the different lines of farm practice, is continued throughout both the Junior and Senior years. The elements contained in the atmosphere and soil being the basis of all vegetable and animal life, the student is instructed in the transformations which take place in these elements in the production of crops, in the growth of animals, and in the principles which govern their conversion into products of the highest economic value.

While suitable text-books are used, the instruction, in both the principles and their application, is imparted mainly by lectures.

For those unable to take the full Agricultural Course, provision has been made for College instruction by means of the College Extension system.

**ANIMAL BIOLOGY.**—In the Freshman year the students in Agriculture pursue Physiology and Zoology two hours a week, the first two terms, reciting with the other students of the Scientific School.

In the Junior and Senior years, Fall and Winter terms, students in Agriculture devote two morning hours and two afternoons a week to General Biology, as follows: General Biology of Plants, first half Fall term, Junior year; Invertebrate Zoology, second half of same term; Vertebrate Zoology, Winter term.

Comparative Osteology and Comparative Embryology, in the Fall term, Senior year; Comparative Anatomy of the Domesticated Animals and Economic Zoology in the Winter term.

For further details see the fuller description of these courses under the Course in Biology. While students in Agriculture devote less time to biological subjects than is required of regular students in Biology, the portions of the work to which they give attention are chosen with especial reference to their needs. The study of the anatomy of domestic animals is furthered by demonstrations from a fine Auzoux model of the horse.

**BOTANY.**—For Freshman work in Botany, see page 44.

In the second term of the Junior year, the students examine with the compound microscope the minute structure of the leaves, stems, roots, flowers and seeds of various plants. The accompanying class-room exercises consist of recitations upon, and elaborations of the work pursued in the laboratory.

During the third term the microscopic study of plants is continued, time being taken for making an herbarium of fifty species of flowering plants, named and neatly mounted.

In the second term of the Senior year a course of lectures is given upon vegetable physiology, and laboratory exercises are continued with ferns, mosses, lichens, algæ, etc. During the third term special attention is given to the various kinds of parasitic fungi, including rusts, mildews, moulds and blights so destructive to crops.

ENTOMOLOGY —In the third term of the Junior year Entomology will be taught chiefly by lectures and laboratory practice. Comstock's "Introduction to Entomology" will be used as a text, and during this term a knowledge of the external and internal structure of insects and of their physiology will be given. Especial attention will be paid to those features which have a bearing on the applied or economic side of the science. In the Senior year an outline of the classification will be given, and the orders will be taken up separately; the most injurious insects in each order serving as types. The collection contains examples of these in all their stages, and the laboratory work will be largely directed to the practical handling of and dealing with the insects in all forms. Insecticides and insecticide machinery will be taken up in the last term and the underlying principles of their successful use will be taught.

## COURSE IN CIVIL ENGINEERING AND MECHANICS.

During the last three years, the students in this course are instructed in Descriptive Geometry, Analytic Geometry, Railroad Curves, Differential and Integral Calculus, Analytic Mechanics, Hydromechanics, Civil Engineering, Bridge-Building and Geodesy, and have practice two afternoons a week in Draughting, with Exercises and Problems in Geometrical Constructions, in Descriptive Geometry, Topographical, Mechanical and Architectural Drawing and in Graphical Statics.

Students in this course, and in the Chemical and Agricultural Course, in addition to the special and technical studies of their course, pursue such studies in English, Rhetoric, Elocution, French, German, Metaphysics, Moral Philosophy, the Duties of Citizenship and the Natural Sciences as are calculated to make them broadly educated and intelligent citizens, and not mere narrow specialists.

## COURSE IN CHEMISTRY.

During the last three years, students in this course are instructed in General, Experimental and Agricultural Chemistry, Crystallography, Blowpipe Analysis, Determinative Mineralogy, Analytical, Organic, Applied and Theoretical Chemistry.

The course of study depends, to some extent, upon the student's future pursuit in life.

EXPERIMENTAL CHEMISTRY is taught in the recitation-room by carefully conducted quizzes and full work in the

laboratory. The student's first and general knowledge of chemistry is obtained by his own observation.

BLOWPIPE ANALYSIS comprises the study of the various reactions and the analysis of a number of substances. The laboratory work is accompanied with constant quizzing in the recitation-room.

GENERAL CHEMISTRY is taught from a text-book fully illustrated by experimental lectures, during two terms of the Sophomore year. An endeavor is made to make the student understand the sure basis of fact on which the science of Chemistry rests, and to reason for himself from these facts. He is also taught to make a careful distinction between facts and theories, and not to confound that which is proved with that which is merely speculative.

ORGANIC CHEMISTRY begins in the third term of Sophomore year, so that students looking towards Agriculture and Biology, as well as Chemistry, can get some idea of the chemical changes connected with their prospective subjects before more detailed study comes. The general behavior of carbon in its compounds is considered, and the different classes it forms, as well as their relations, are studied so that the fundamental chemical changes concerned in the growth of plant or animal can be properly understood by students in these courses.

In the first and second terms of Junior year the subject is continued by those in the chemical course, and then the development becomes more detailed. The student is con-

stantly questioned and expected to show a thorough knowledge of all principles developed in the text-book. He also is given imaginary problems and taught how to plan an investigation with carbon compounds, thereby gaining a theoretical knowledge of the methods of research in this subject. Laboratory work follows in the Senior year.

The lectures are accompanied by full experimental illustrations.

**ANALYTICAL CHEMISTRY.**—The chief object of a scientific course is to teach how to study nature, how to put questions, how to interpret the answers. So the student commences with experiments on bodies of known composition, performing those experiments that characterize common, simple substances, until he is perfectly familiar with the reactions, both theoretically and experimentally, the theoretical part being considered in the class-room. Then complicated bodies are examined, until most difficult substances are readily analyzed, and the student is ready for

**QUANTITATIVE ANALYSIS**, which is taught in a similar way. The student first analyzes substances of known composition until perfectly familiar with the peculiar manipulation in this subject. Then he proceeds to substances of unknown composition. Through one College year, instruction is given, with recitations and questionings during the first term.

At the end of the year, the student has gained a knowl-



edge of Analytical Chemistry sufficient for all ordinary purposes, and therefore, in the Senior year, he can profitably take up such special branches as may seem best for him.

STOICHIOMETRY, the mathematics of chemistry, is taught by lecture, recitation and blackboard drill. During the course, a large number of problems is given for solution, special attention being paid to those occurring in technical work.

APPLIED CHEMISTRY.—The application of Chemistry to the arts and manufactures is taught by lectures and text-book. Whenever it is practicable, the actual products are exhibited to the students, and the manufacturing processes reproduced in miniature. Attention is drawn to the scientific relations and connections between the various manufactures. The great losses by imperfect methods of manufacture and by waste products are pointed out, and the student is taught to see the true economy of production. Illustrative of the lectures, visits are made to various manufacturing establishments, of which there are a number in and about New Brunswick, and an opportunity is given to see manufacturing operations in actual working.

PRINCIPLES AND THEORIES of Chemistry having recently developed in a very remarkable way, form a most important branch of Chemistry. Accordingly, the subject extends throughout the Senior year. The instruction begins with a discussion of the atomic weights and the general

chemical properties of gases. Then liquids and solids are considered from a chemical point of view, particular attention being paid to chemical action in solution. The course is so arranged that at the end students have a clear idea of modern chemical thought.

Owing to the exceedingly careful observations required, few experiments can be performed in the class-room, but the student is encouraged to become more familiar with the subject by experiments at his desk.

After finishing experimental organic chemistry, the student takes up work for his thesis chosen by him, but subject to the approval of the instructor.

MINERALOGY is taught in the Junior year. In the second term there is a course of lectures in Descriptive Mineralogy, in which the general characters of minerals are discussed, and some of the most important species are carefully studied. Special attention is paid to CRYSTALLOGRAPHY, as being one of the most distinguishing characteristics, and therefore much used in Determinative Mineralogy, which occupies the third term. In this part of the course the student learns to make the tests by which minerals are distinguished from each other, and becomes familiar with their differences by actual handling and comparison. In this course use is made of the College collections, supplemented by the private collection of the Professor in charge.

Geology is studied in the first and second terms of the Senior year. A text-book is used, but each lesson is explained in advance and fully illustrated by the use of specimens, with which the College is abundantly supplied.

## COURSE IN ELECTRICITY.

This course is nearly the same as that in Engineering, Physical Laboratory practice being substituted for Railroad Curves, Bridge-Building and Geodesy, and for part of the afternoon work in Draughting. This preparation enables graduates to take such positions as do not demand the full mechanical and mathematical equipment of a professional electrical engineer. And those who intend to pursue Electrical Engineering after graduation are furnished with the necessary practical basis. Manual skill and preference for mechanical details are prime requisites for electrical pursuits, hence, those who enter the course will be required to do the most exact work possible, and expected to show cheerful patience in tedious manipulations.

The Physical Laboratory is provided with engines, motors, dynamos and testing apparatus.

## COURSE IN BIOLOGY.

Students electing this course must divide their time nearly equally between three departments, viz. :

ANIMAL BIOLOGY, first and second terms; BOTANY, second and third terms; ENTOMOLOGY, first and third terms. Agricultural and Classical electors follow the same general subjects as the Biological electors for corresponding terms. The course is recommended as introductory to medical studies or special biological branches of education or investigation.

DEPARTMENT OF ANIMAL BIOLOGY.—Human Anatomy, Physiology and Hygiene is a required study during the first term, Freshman year. Instruction is given by means of lectures, demonstrations, charts and Auzoux models. The aim is to make the student see the importance of a knowledge of lower forms of life to a comprehension of human biology. Students applying for advanced standing should offer satisfactory evidence of the mastery of such a text-book as Martin's "The Human Body" (Briefer Course), or its equivalent.

Zoology is a required study during the second term, Freshman year. The method of instruction is by means of lectures and demonstrations of charts, specimens and models. Some laboratory work is done in the class-room. The object is a general survey of the great groups of animals, their general structure and affinities, which may serve as introductory to the study of Historical Geology pursued later, and also may enable the student to appreciate the more popular biological discussions of to-day. Those who enter higher classes without pursuing this course must give satisfactory evidence of mastery of Orton's "Comparative Zoology" or some work on zoology of at least equal grade.

The elective work begins in the Junior year with General Biology. This is mainly in the Laboratory, and is pursued by means of microscope and scalpel. The student sketches and describes the objects studied. Supplementary lectures are given. Each student provides himself with Parker's "Lessons in Elementary Biology" and a small

case of instruments. Other apparatus, microscopes and materials are provided in the laboratory, for which a fee is required. The following subjects are studied in the order mentioned :

1. *General Biology of Plants*.—First half, Fall term, Junior year. Topics: Fermentation (Yeast), Fungi (Mucor, Penicillium), Bacteria, Algæ (Pleurococcus, Hæmatococcus, Spirogyra), Chara, Moss, Fern, Alternation of Generations in Higher Plants.

2. *Biology of Invertebrated Animals*.—Second half of Fall term, Junior year. Topics: Protozoa (Amœba, Vorticella, etc.), Cœlenterates (Hydra, Hydroids, Sponges), Echinoderms (Starfish), Vermes (Earthworm, etc.), Molluscs (Oyster, Clam, Snail), Arthropoda (Lobster).

3. *Biology of Vertebrates*.—Winter term, Junior year. Topics: Fish, Frog, Turtle, Pigeon, Mammal (Cat or Dog).

4. *Embryology*.—Fall term, Senior year. The subject of Comparative Embryology is introduced by a practical study of the development of the hen's egg, artificial incubation being used. This course is intended, also, to supplement the work on Invertebrate Biology of the Junior year.

5. *Osteology*.—Fall term, Senior year. The subject of Comparative Osteology is introduced by a detailed study of the skeletons of the domesticated animals.

6. *Comparative Anatomy*.—Winter term, Senior year. Vertebrate Anatomy, introduced by the careful dissection of a mammal, is now offered as supplementing the Vertebrate Biology of the Junior year.

7. *Histology*.—Winter term, Senior year. In connection with the careful dissection of a mammal, the histological and technical training previously gained is now greatly extended by a special microscopical study of sections of the various organs.

8. *Economic Zoology*.—Winter term, Senior year. The principles previously acquired are now applied to practical questions, and such topics as the Laws of Heredity and of Stock Breeding are discussed in a way to show how abstract truths can be subjected to economic application.

**BOTANY.**—The study of Botany, two hours a week, begins in the third term of the Freshman year, and the ground covered is embraced by "Gráy's Revised Lessons." In connection with the text-book work, each student makes drawings and descriptions of leaves, stems, roots and other parts of plants. This is followed by a thorough study of the flower from living specimens gathered in the field. The terms used in Descriptive Botany are dwelt upon so that each member of the class becomes familiar with the methods of determining the botanical names of plants, and acquaints himself with the relationships of genera and orders.

Laboratory study in Botany begins in the second term

of the Junior year, and students then pursue a course in vegetable anatomy with the compound microscope, in which they are introduced to the various kinds of tissues and tissue systems as illustrated in the leaves, stems and roots of the higher plants. In the third term, laboratory practice is continued with the histology of the organs of reproduction, and the collecting of plants in the field begun. Each student prepares an herbarium of at least fifty species, all neatly mounted and fully labeled.

The Seniors, in their second term, have a course of lectures upon Vegetable Physiology, special attention being paid to the origin of varieties through cross-fertilization and other causes. In the laboratory, each member of the class becomes familiar, microscopically, with the histology of cryptogams, particularly those best enforcing the principles in Physiology considered in the class-room. The third term is specially devoted to a consideration of those low organisms that are so obscurely known under the general term of the fungous diseases of plants, and embracing one branch of Economic Botany, now called Vegetable Pathology.

**ENTOMOLOGY.**—In the third term of the Junior year, Entomology will be taught, chiefly by lectures and laboratory practice. Comstock's "Introduction to Entomology" will be used as a text, and during this term a knowledge of the external and internal structure of insects and of their physiology will be given. Especial attention will be paid to the morphological and biological side of the science. In the Senior year the system of classification will be given,

and the students will be required during laboratory hours to prepare, classify, and arrange collections, in part made by themselves. A very full collection of the insects of the United States will assist in acquainting the student with the family types. The aim will be to give such a knowledge of the subject as a whole, as will enable the student to specialize without further assistance should he desire to continue the study at the conclusion of the course.

#### MILITARY DEPARTMENT.

This department is in charge of the Professor of Military Science and Tactics, an officer of the regular army, detailed by the War Department for the purpose.

Instruction is both practical and theoretical.

**PRACTICAL.**—The student, on entering College, is drilled in the School of the Soldier, including bayonet exercise, and is advanced, successively, to the Schools of the Company and Battalion.

Considerable attention is given to target practice, the College being supplied with latest-model Springfield rifles and a liberal supply of rifle ammunition.

**THEORETICAL.**—During the Junior and Senior years, elementary instruction, by means of lectures and recitations, is given in the Art and Science of War, Modern Tactics, Modern Small Arms and Cannon, Explosives, Military Correspondence and Reports, Care of Troops in the Field, Military and Martial Law and other military subjects.



**UNIFORM.**—A uniform consisting of cap, blouse and trousers of dark-blue cloth, has been adopted, the cost of which is about \$14, or considerably less than that of a good suit of civilian's clothes. The entire suit is neat and serviceable, and, while required to be worn at drills, may be worn on any occasion.

**MILITARY DRILL** is required of all students in the Scientific Department, except as they may be excused by reason of conscientious scruples, physical disability or some similarly valid reason.

In the Gymnasium about to be erected, a drill-room and armory will be provided for purposes of military instruction.

The object of instruction in this department is not only to comply with the requirements of the laws of Congress for the State Colleges organized under the Act of July 2d, 1862, but also to improve the health and physique of students, and to give that elementary military knowledge which every citizen should possess, that he may render intelligent and effective aid to his country or state in case of war or riots.

#### ANNUAL REPORT OF THE SCIENTIFIC DEPARTMENT.

More extended information as to the studies and courses in the Scientific School will be found in the Annual Report of the New Jersey State Scientific School to the Governor and Legislature of New Jersey, which will be sent to any address on application.

**3. ORGANIZATION.**

Rutgers Scientific School has been designated by the Legislature of New Jersey, in accordance with the law of Congress of July 2d, 1862,

**THE STATE COLLEGE FOR THE BENEFIT OF AGRICULTURE  
AND THE MECHANIC ARTS.**

**FREE SCHOLARSHIPS.**

Under the law, a certain number of students from the State of New Jersey are received into this department of the College, and educated free of expense for tuition. This law also provides for the appointment by the Governor of a Board of Visitors, two from each Congressional District, who possess general powers of supervision and control. The State pupils are admitted to free scholarships on the recommendation of the Superintendent of Schools in each county, and on passing the required examinations. These free scholarships are distributed among the counties in proportion to their population, as follows:

**STATE SCHOLARSHIPS.**

ATLANTIC, . . . . .	1	MIDDLESEX, . . . . .	2
BERGEN . . . . .	1	MONMOUTH, . . . . .	2
BURLINGTON, . . . . .	8	MORRIS, . . . . .	2
CAMDEN, . . . . .	2	OCEAN, . . . . .	1
CAPE MAY, . . . . .	1	PASSAIC, . . . . .	2
CUMBERLAND, . . . . .	1	SALEM, . . . . .	1
ESSEX, . . . . .	6	SOMERSET, . . . . .	1
GLOUCESTER, . . . . .	1	SUSSEX, . . . . .	1
HUDSON, . . . . .	6	UNION, . . . . .	2
HUNTERDON, . . . . .	1	WARREN, . . . . .	1
MERCER, . . . . .	2		<hr/>
			40

In June, 1888, the Trustees, to express their appreciation of the action of the Legislature in making the first appropriation yet made to further the work of the State College, voted to give to the young men of New Jersey

**TEN ADDITIONAL FREE SCHOLARSHIPS "AT LARGE."**

By a law passed March 31st, 1890, establishing

**A FREE SCHOLARSHIP FOR EACH ASSEMBLY DISTRICT EACH YEAR,**

provision is made for affording the advantages of a liberal course of study, free of expense for tuition, in the State Agricultural College to the students in the schools in all parts of the State, who shall be selected as follows: "A competitive examination, under the direction of the City Superintendents and the County Superintendent of Education, in each county, shall be held at the County Court House in each county of the State, upon the first Saturday in June in each year."

The examination will be held on June 3d, 1893, and candidates for Free Scholarships will be examined in the subjects required for admission, as stated on pages 56 and 57.

The law provides that if several properly qualified candidates for appointment pass the examination from the same Assembly District, all who are suitably qualified shall receive appointment to such free scholarships, excess

from certain Assembly Districts being counterbalanced by vacancies in other Assembly Districts, provided only that the entire number of appointees shall not exceed the entire number of free scholarships created by the State.

Letters of inquiry to the President, or to Mr. IRVING S. UPSON, Registrar, will receive careful attention.

THE NEW JERSEY STATE AGRICULTURAL COLLEGE  
EXPERIMENT STATION.

By the Act of Congress of March 2d, 1887, a law was passed entitled "An act to establish Agricultural Experiment Stations in connection with the Colleges established in the several States under the provisions of an act approved July 2d, 1862, and of the acts supplementary thereto." This act is commonly known as the "Hatch Act," from the active interest taken in its passage by Hon. William H. Hatch, M.C., of Missouri. It authorizes the appropriation of \$15,000 annually for the support of Agricultural Experiment Stations in connection with the Colleges which were established in the several States "for the benefit of Agriculture and the Mechanic Arts," by the Congressional Act of July 2d, 1862.

The Legislature of New Jersey, by its acts of March 16th, 1887, and of March 5th, 1888, designated the Trustees of Rutgers College "as the parties to whom all moneys appropriated by Congress under said acts of Con-

gress or supplements thereto shall be paid for the purposes mentioned in said acts of Congress." The department of Rutgers College known as Rutgers Scientific School, is, by law, the State Agricultural College. The Agricultural Experiment Station is established in connection with it.

By the co-operation of the State Experiment Station, a large and well-fitted laboratory has been erected, and investigations are in progress upon the insect enemies of plants, upon the food-products of our fresh and salt waters, and their improvement, upon the geology and chemistry of our soils, and the effect of tillage and fertilizers upon them, upon the diseases of plants, and the application of science to the growth of agricultural and horticultural products, and upon the food consumption and the value of the products of the best five breeds of dairy cattle.

While the main business of such a Station is in searching after new truths, and arranging them for practical and economic use, the proper location for it is in connection with an institution of learning. Almost all our investigators are teachers. The investigation and diffusion of knowledge necessarily go hand in hand; and the example of men devoted to the searching for useful truths is stimulating to those who are yet in their preparatory studies, and are aspiring to fill well their places in life.

It is from those now preparing that our future investigators must come, and it is important that they should have those who are now in the field of work directly before them. In this respect it is believed the location of the Station at the College will be most salutary in its influence.

## EXTENSION DEPARTMENT.

The Trustees, desiring to increase the usefulness of the State College, and to give the benefits of liberal training to the people at large who cannot enter the institution as regularly enrolled students, have established a special department, for extension teaching. Under the auspices of this department, lecture courses are given in various localities in the State of New Jersey, by members of the Faculty and other teachers connected with the College, in Agriculture, the English Language, and the various branches of natural and economic science.

The work is conducted chiefly on the plan that has proved eminently successful elsewhere, embodying the following features:

1. LECTURES.—Full courses consist of twelve lectures, delivered generally at weekly intervals, beginning at any time after October 1st, as may be arranged with the places desiring them. Shorter courses of six or more lectures are also furnished if demanded.

2. SYLLABUS AND TEXT-BOOKS.—For every course of lectures a syllabus is prepared, giving an outline of the subject treated and serving as a brief and condensed text-book. Other books for parallel reading are introduced as required.

3. THE CONFERENCE HOUR.—To give those who desire the benefit of personal contact with the lecturer, an hour for informal class-work is held immediately after the lecture, where questions are asked and answered, and where obscure points are further elucidated.

4. **THE WRITTEN EXERCISES.**—To those who attend the conference hour work is assigned, upon which written papers are prepared during the week and mailed to the lecturer for correction and criticism.

5. **THE EXAMINATION.**—At the end of a course the lecturer holds an examination, open to all who, besides attending the lectures and conference hours, have performed the required written work.

6. **CERTIFICATE.**—To those who successfully pass this examination, the College awards a formal certificate. This specifies the subject, the date, and the lecturer under whose direction the work has been done.

Full information concerning the courses offered and the lecturers who shall deliver them, the cost of any course, the methods of local organization, etc., will be furnished on application. Inquiries should be directed to the President, or to Professor LOUIS BEVIER, Jr., the Secretary of the Extension Department.

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## EXAMINATIONS.

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The classes in both departments are examined at the close of each term. These examinations are partly oral and partly written, and have an important bearing upon the standing of the student in his class.

Unexpected examinations at irregular intervals are held at the discretion of each instructor. The object of these examinations is to cultivate the habit of considering the

relations of each day's work to what has been done before, and to stimulate effort on the part of each student to gain a comprehensive knowledge of the subjects studied.

At the end of the first and third terms, the examinations of the classes of the Scientific Section are held in the presence of the Board of Visitors, who then make their semi-annual visits to the institution.

At the end of the third term, each member of the Graduating Class of the Scientific Section is required to present a thesis on some scientific subject, a copy of which is written out upon paper suitable for binding, and deposited in the College Library.

The final examination of the Graduating Classes is held four weeks before Commencement, from which time they are subject to such duties as are required for their preparation for Commencement.

Students who receive conditions at the June Examinations must report at College prepared to be examined upon the whole of each of the subjects on which they have conditions, at 10 A. M. on the Tuesday before College opens, in September.

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## GRADUATION.

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To all members of the Graduating Class of the Classical Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Arts.



To all members of the Graduating Class of the Scientific Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Science.

To students, in either Department, who have satisfactorily pursued special courses of study, a certificate is granted stating the studies pursued and the attainments made.

The following regulations have been adopted by the Board of Trustees regarding the graduating exercises at Commencement :

1. The privilege of speaking at Commencement shall be limited to eight men, and shall be open without distinction to the Classical and Scientific Sections of the Graduating Class.

2. The graduating honors shall be as follows :

FIRST HONOR, . . . . .	Valedictory.
SECOND HONOR, . . . . .	Latin Salutatory.
THIRD HONOR, . . . . .	Philosophical Oration.
FOURTH HONOR, . . . . .	Scientific Oration.

3. These honors and orations shall be awarded in the order named, according to grade made up of the combined marks in all the subjects of the course.

4. An oration to be known as the RHETORICAL HONOR shall be awarded to that member of the class who shall have received the highest grade in Composition and Elocution during the Junior and Senior years, provided he rank in general grade of scholarship among the first half of his class.

In case the Rhetorical Honor shall fall to one who has

also taken one of the four honors for scholarship, an additional speaker shall be appointed according to general grade as fifth in scholarship.

5. Three other orations shall be awarded according to grade in Composition and Elocution, during the Junior and Senior years, provided the recipients rank among the first two-thirds of the class in general grade of scholarship.

On and after Commencement Day in 1894 the following regulations are to govern the assignment of graduation honors and the appointment of speakers at Commencement:

1. There shall be three scholarship honors in each section of the Graduating Class, awarded to those students who shall stand first, second and third respectively, in all the required studies of the Classical or Scientific curriculum, provided that in each individual case the student so standing shall rank among the first four in the major subject or subjects of his elective course.

2. There shall be no distinction by way of comparison between the scholarship honors of the Classical School and those of the Scientific School.

3. The three scholarship honors of each School shall be designated as follows:

CLASSICAL SCHOOL.

First Honor—Philosophical Oration.  
Second Honor.  
Third Honor.

SCIENTIFIC SCHOOL.

First Honor—Scientific Oration.  
Second Honor.  
Third Honor.

4. An oration to be known as the Rhetorical Honor shall be awarded to that member of either section of the

class who shall have received the highest grade in Composition and Elocution during the Junior and Senior years, provided he rank in general grade of scholarship among the first half of his class in all of the required subjects of the Classical or Scientific curriculum.

A student may receive either one of the three Scholarship Honors and the Rhetorical Honor, but he shall deliver only one oration at Commencement.

5. Two other orations shall be awarded according to grade in Composition and Elocution during the Junior and Senior years, provided the recipients rank among the first half of either section in general grade of scholarship in all of the required subjects of their curriculum.

#### DEGREES AND POST-GRADUATE STUDIES.

The degrees of A.M. and M.S. are no longer given "in course," but only for work done.

The Faculty will recommend for the degree of Master of Arts or Master of Science candidates otherwise properly qualified, who, after taking the appropriate Bachelor's degree—

1. Shall pursue for at least one year at Rutgers College a course of liberal and non-professional study, approved by the Faculty, and shall, beside the term examinations, pass a thorough examination on that course and present a thesis on some topic connected with it; or,

2. Who, not less than three years after taking the Bachelor's degree at Rutgers College, shall make application for the Master's degree, presenting at the same time a cer-

tificate of graduation from a Theological Seminary, a Law School or a Medical School, or of admission to the practice of Law or Medicine ; or,

3. Satisfactory evidence by thesis or otherwise of successful labor in education or literature pursued during three consecutive years and of advanced studies prosecuted ; or,

4. In case of Bachelor of Science, satisfactory evidence of successful professional work actually done and advanced professional studies prosecuted.

The degrees of Ph.D. and Sc.D. may be conferred upon resident graduates of the College who shall pursue for two years prescribed courses of study under the direction of the Faculty.

The conditions will be made known on application.

The degree of Civil Engineer is a professional one, and is, on application, conferred upon graduates of the College who have taken the degree of Bachelor of Science, and subsequently have passed three years in the practice and study of engineering, with results satisfactory to the Faculty.

The applicant is required to furnish a statement of the work upon which he has been engaged, and to present a thesis or discussion of some engineering work which he has done. The application and thesis must be presented to the Secretary of the Faculty at least one month before Commencement.

REGULATIONS.

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Morning prayers are attended in the College Chapel each morning, except Saturday and Sunday, at 8:40 o'clock.

A Bible-Class is held Sunday morning in the College Chapel at 9:30 o'clock. Students are required to attend it.

A sermon is preached every Sunday morning in the College Chapel at 10:30 o'clock. Students are required to be present.

They are expected, also, to attend public worship in the afternoon or evening, at such place as their parents or guardians may direct.

No student is allowed to leave the city during term time without permission from the President or the Registrar.

Excuses for absence from all College duties must be obtained from the Registrar.

Unexcused absences are reported to the Faculty; and a student is not allowed to make up the recitations omitted, but receives zero as a mark.

Recitations (except in cases of "Electives") are marked on a scale of 100, and the average standing of each student is made up at the end of each term, and sent to his parent or guardian. A mark at examination counts as much as one-third of the term's work up to the time of examination.

If the grade of a student in any term falls below 60 per centum of the maximum in one of his studies, he is

conditioned in that study, and must be re-examined therein.

If the average of any student in any study at any time falls below 60 per centum of the maximum grade, his case must be acted on as the Faculty shall deem necessary.

If any student's average grade in any term falls below 60 per centum of the maximum, he loses his standing in his class, and is required to fall back a year in the course. If his work is not satisfactory after a month's trial here, he is dismissed from College.

Marks given in ELECTIVE work do not enter into the computation of grade ; and the only official report of work done in Electives is the announcement, at the end of each term, in each student's report, that he has "failed" or "passed," or "passed with honor," in each of his elective courses.

If any student is found to be notably deficient in his daily recitations, or at the examination in any of his studies, his case is reported to the Faculty, and such action by way of discipline is taken as may be deemed necessary.

No student can be promoted to an advanced class until all his deficiencies are made up ; and if he fails to make up all his deficiencies before the opening of the College year, he ceases to be a member of his class. Examinations for making up such deficiencies are held on the Tuesday before the opening of the Autumn Session in September, at 10 A. M.

## COLLEGE EXPENSES.

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**FEES.**

Tuition, per annum, . . . . .	\$75 00
Incidentals—Janitor, Fuel, Reading-Room, per annum, . . . . .	10 00
Admission Fee, . . . . .	5 00
Graduation Fee, . . . . .	7 50
Analytical Chemistry, extra, per term, . . . . .	15 00
Electricity, extra, per term, . . . . .	10 00
Biology, extra, per term, . . . . .	5 00

Of the above expenses, the admission fees are payable on entrance, to the College Treasurer; the incidental expenses are payable at the beginning of the first term, in September; of the tuition fees, one-third, viz., \$25, is payable within ten days after the beginning of each term. All checks should be made payable to the Treasurer of Rutgers College.

Students in the Scientific Courses are required to procure sets of draughting instruments, costing from \$10 to \$20. They are advised to defer the purchase of these instruments until entering College, as they will then have the advantage of procuring them under the direction of the Professor of Draughting.

Students in Analytical Chemistry are charged \$15 additional a term, for chemicals and use of laboratory, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with the necessary sets of ap-

paratus, which may be obtained from the regular apparatus dealers, or from the Laboratory Supplies department. These sets are retained through the year, but at the end of it, if the owners do not wish to keep them, they will be purchased at a fair price. If proper care has been exercised, a small discount only (about 10 per cent.) from the original cost will be made. All breakage will be charged in full.

Students in the Electrical Course are charged \$10 extra, a term, throughout the Junior and Senior years, for the use of laboratory and apparatus, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with files, pocket magnifiers and towels. All damage to College apparatus will be charged in full.

Students in Biology are charged \$5 extra, a term, for the use of instruments and laboratory, which amount must be paid within ten days after the beginning of the term.

Students in the Classical Course, electing Physics, are charged \$5 extra, a term, for the use of the laboratory and apparatus, which amount must be paid within ten days after the beginning of the term.

#### BOARD.

Board, with furnished room, can be obtained in New Brunswick at the present time for \$4 to \$7 a week; board without rooms for \$3 to \$5 a week. Students having the ministry in view may obtain rooms in Hertzog Hall, in the Theological Seminary, free of charge. These rooms are heated and lighted.



The Faculty are empowered to pass such regulations relative to the number of boarders in each house as they think proper ; and students shall board only at such places as are approved by them.

By combining in clubs, students are able to reduce somewhat their expense for board.

Free scholarships and pecuniary assistance may be given to young men of approved character and ability, whose family circumstances are such as to make this assistance necessary. No deserving student who has shown perseverance and capacity is allowed to give up his course for lack of assistance.

#### **DORMITORY—WINANTS HALL.**

The late GARRETT E. WINANTS, Esq., of Bergen Point, N. J., a Trustee of the College, gave to the College a handsome and spacious Dormitory, which is located on the west side of the Campus, fronting the east. The colonial style of architecture was adopted, in harmony with Queen's building, and combining with the dignity of an academic structure the hospitality and homelikeness suggested by the American mansions of the latter part of the last and the beginning of the present century.

**DIMENSIONS.**—The building is 145 feet long by 65 feet wide, the center portion being 40 x 72 feet. It is four stories high, with basement and ample cellar.

**MATERIALS.**—The basement and first story are of Newark or Belleville brownstone, with rock-faced, regular-coursed ashlar ; the columns of the recessed porches, the

cornices and other trimmings, are of cut stone. Above the first story the walls are of red Trenton pressed brick; the pilasters and main cornice and facings of dormer windows are of buff Roman brick with terra-cotta enrichments. In the pediment of the center building the coat of arms of the Reformed Church and the legend of the College,—“*Sol justitiae et occidentem illustra*,” 1766,—are modeled in terra-cotta, and over the main entrance the name of the building is carved in stone. The steep roofs are of slate, the deck being surrounded by a balustrade. The floors are double and deafened; all the corridors and halls are of maple; the dining, reception and students' rooms, of yellow pine. The doors and trimmings are of white and yellow pine, finished in natural colors, without paint. The stairways are of oak. The walls are of plaster, of yellow-toned color. Handsome mantels and wainscotting of yellow pine are in the main hall and assembly and dining-rooms. A clock has been placed at the top of the building.

**ARRANGEMENTS OF THE HALL.**—The main entrance is a broad Loggia or recessed porch, and there are also entrances at both ends of the building. On the first floor is a spacious hall, with a broad stairway as a central feature, and fire-places of Roman brick at either end, the intervening spaces being furnished for reception of visitors. The dining-room, 37 x 36 feet, is in the rear of the hall, and connected with it is a large assembly-room, 47 x 26.3 feet. These two rooms can be used together for Alumni dinners and other social and public occasions; ample serving-rooms, pantries, etc., adjoin the dining-room.

**STUDENTS' ROOMS.**—The building accommodates 120 students. The rooms are arranged in suites of a study and two single sleeping-rooms, for two room-mates, and there are a few single rooms. Special attention is given to light, ventilation and sanitary appliances, and to the necessary quiet retirement and privacy of the students. These rooms occupy portions of the first and fourth, and the whole of the second and third stories.

The kitchen and laundry, stewards' and servants' apartments are in the fourth story, thus securing the proper isolation and management of the employes, and freedom from the odors and other inconveniences of basement kitchens. Dumb-waiters and private stairways extend from the cellar to the fourth story. Ample provision is made for fire-escapes and other securities against accidents.

The entire building is heated by steam, which can be made available for other purposes if deemed desirable. Bath-rooms, lavatories, linen closets and store-rooms are on each floor.

The large study-rooms are each furnished with two study tables and two chairs. The bed-rooms are each furnished with a solid oak set, consisting of bedstead (springs and mattress), bureau, washstand and two chairs. The remaining furniture, such as sheets, pillows, pillow-cases, coverlids, towels, bowl and pitcher, etc., are to be supplied by the occupant. The schedule of prices for single rooms and suites of rooms, heat and gas light included, will be furnished upon application.

In drawing for choice of rooms, the order of classes will be followed, precedence being given to the Seniors.

Any person drawing a suite of rooms may choose his associates from any of the classes. Rooms are to be taken for the full year, unless specially released. Rent is payable in advance, one-third at the beginning of each term. Agreement to pay rent is for the entire suite, and must be signed by the student who draws it, or his guardian. Rooms may be occupied from the Monday preceding the opening of the College year to the Saturday following Commencement.

The drawing for choice of rooms for the year 1893-'94 will take place in the Registrar's office on Wednesday, June 6th, 1893, at 2:30 P. M.

BOARD.—A matron who has had long experience and is known for her competency, has been engaged to assume the management of the building so far as the care of the rooms and the furnishing of board are concerned. The charge for board for the present year to the students is \$3.75 a week.

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## BENEFICIARY AID.

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A student who is preparing for the ministry of the Reformed Church in America and who needs pecuniary assistance, may be placed on one of the Beneficiary Funds which the Trustees hold in trust for the purpose; *provided*, that he engage to pursue his studies uninterruptedly until he shall have completed his theological course in one of

the theological schools under the care of the General Synod of the Reformed Church in America, in accordance with the requirement of said Church, Art. 2, Sec. 2.

All who are placed on these funds receive \$150 annually.

**1. Van Benschoten Fund.**

This fund, the gift of the Rev. ELIAS VAN BENSCHOTEN, in 1814, amounting to \$20,813, was given in trust jointly to the General Synod of the Reformed Church and the Trustees of Rutgers College, to aid in the education of indigent students for the ministry. The students who enjoy the benefits of this fund are appointed by the Trustees of the College on the nomination of the General Synod of the Reformed Church.

**2. Knox Fund.**

This fund, consisting of \$2,000, was given by Mrs. REBECCA KNOX, of Philadelphia, in 1815, to the Trustees of Rutgers College, the income from it to be expended for the support of one student in the Theological Seminary.

**3. W. H. Smock Fund.**

WILLIAM H. SMOCK, of Marlboro, N. J., left by his will, to the Trustees of Rutgers College, the sum of \$500, to be invested as a fund, the interest of which should be used to aid in the education of young men for the ministry. This legacy was received in 1859, and has been duly employed since that time for the purpose named.

**4. Mandeville Fund.**

In 1865, the Trustees of Rutgers College received from the executor of the will of WILLIAM MANDEVILLE, of New York City, the sum of \$2,000; said sum to be invested and the income thereof to be applied to the support of a theological student in the College.

**5. Voorhees Fund.**

ABRAHAM VORHEES, of Franklin Park, N. J., bequeathed by his will \$26,000 to the Trustees of Rutgers College, the income of which is to be expended in aiding worthy young men who are candidates for the ministry, while pursuing their studies in Rutgers College.

**6. The Brownlee Memorial Fund.**

This fund consists of \$2,000, the income of which is to be used for purposes of ministerial education. It was given in 1891 by Mrs. WILLIAM A. BLOODGOOD, of New York, in memory of her father, the late Rev. WILLIAM C. BROWNLEE, D.D., who was at one time Professor of Languages in the College, and afterwards for many years an active and efficient Trustee.

**7. Free State Scholarships.**

The law of the State of New Jersey granting to the Scientific Department of Rutgers College the Agricultural College Endowment, provides for the education of forty State students free of expense for tuition. These scholarships are distributed among the counties in proportion to

their population, and the appointments to fill vacancies are made by the County Superintendents. The appointment gives the right to a course of instruction of four years in Rutgers Scientific School, to students successfully passing the entrance examinations.

The Trustees of the College, in 1888, voted ten additional scholarships "at large" for students from New Jersey in the Scientific School.

By a law of the State passed March 31st, 1890, a free scholarship for each Assembly District each year is established. See pages 82, 83, 84.

#### **8. Board of Education.**

The Board of Education of the Reformed Church grants aid to young men preparing for the ministry in the denomination. The conditions are that the persons receiving aid shall have been members of some Evangelical Church one year, and at the time members of some Reformed Church. The aid may be obtained either while in College or in the Theological Seminary.

At present the amount given is \$150 per annum. Information may be had by addressing the Secretary of the Board, 25 East 22d street, New York City.

#### **9. Rooms for Students.**

Such rooms in Peter Hertzog Hall as may not be required for the use of the students of the Theological Seminary, are allowed to be occupied by the students of the College who have the ministry in view, and on the same conditions as the members of the Theological Seminary, *i. e.*, free of charge.

## HONORS AND PRIZES.

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In every case where it is expected that a prize will be awarded for work done, it is distinctly announced that unless in the opinion of the examiners the work submitted is of such excellence as to merit a prize or prizes, no prize will be awarded.

All prizes and honors are open equally to members of the Classical and Scientific Departments, except in cases where prizes are specially limited to one department by the donor. Each competitor for a prize must sign a written declaration that the essay or other work offered by him is his original and unaided work. The essays are to be written on a paper of a prescribed kind, and the successful essay is to be deposited in the College Library, before the writer is entitled to the prize.

### 1. HONORS.

#### 1. Honors in Elective Studies—(In Effect on and After Commencement Day in 1894).

Department or Individual Honors may be granted in each elective subject. Of these there are two in each Classical course, and one in each Scientific course. Such an honor will be granted to that student who stands highest in the particular elective subject, on two conditions:

1. Provided that he stand in the first third of the Classi-



cal or Scientific Section of his class in the required studies of his course; and,

2. Provided that he be recommended to receive that honor by the Professor or Professors who have instructed him in the elective subject or subjects.

Competition for individual or department honors shall begin where the courses begin to diverge, *i. e.*, with the first term, Junior year, in the Classical Department, and with the first term, Sophomore year, in the Scientific Department.

**2. Honorable Mention for Work outside the Course done  
Without Reference to a Prize.**

For the encouragement of independent reading and study and original investigation, under the direction of the Faculty, honorable mention is made of students who give evidence of thoroughness in such work, and pass a satisfactory examination.

Hobart Earl Studley, of the Class of 1893, receives honorable mention for work done and examinations passed in German, minimum requirement, 300 pages.

John Henry Carnes, Charles E. Conover, Robert Kitching Painter and Alexander Brokaw Way, all of the Class of 1895, receive honorable mention for work done and examinations passed in French, minimum requirement, 500 pages.

## 2. PRIZES.

### 1. Suydam Prize for Composition.

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be given to the member of the Senior Class who shall write the best English Composition on the subject assigned to the class by the Professor of Rhetoric. Competitors must hand in their compositions on or before April 20th. Subject for 1893: "Thomas Reid's Philosophy; its Distinctive Features and Influence."

### 2. Suydam Prize in Natural Science.

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall have made the greatest attainments in Natural Science. The examination is upon all the subjects of Natural Science in the College course, and is conducted by the Professors in those subjects. The questions and answers are required to be written.

### 3. Brodhead Classical Prize.

This prize is the gift of Rev. Dr. JACOB BRODHEAD and his son, J. ROMEYN BRODHEAD, LL.D. It is the interest on \$500, *i. e.*, twenty-five dollars, to be given to the best Senior Classical scholar, on the following conditions:

First. "That those who offer themselves as candidates for it shall be subjected to a special examination, at a time

to be fixed by the Faculty near the close of the Senior year."

Second. "That the subject of the examination be a passage or play of some classical author (not included in the College programme of studies), to be selected by the Classical Professors, and to be announced at least one month before the time fixed for the examination."

Third. "A subject for an essay shall be announced at the same time, and the essay shall be given in on the day of examination."

Fourth. "Both the examination and the essay shall be taken into account in the adjudication of the prize. A law copy of the essay of the prize-man shall be handed in by him before the medal is put into his hands, to be preserved among the archives of the College."

(a) Subject of Essay to be written in Latin, not less than ten (10) thesis pages: "The Influence of the Stoic Philosophy on Roman Legislation."

(b) Text for Examination in Latin: Cicero, *De Natura Deorum*, Book II.; Cicero, *De Legibus*, Book I.; Digest, Titles I., 1 (*De Iustitia et Iure*), and L., XVII. (*De Diversis Regulis Iuris*).

#### 4. Bradley Mathematical Prize.

This prize was established by the late Hon. JOSEPH P. BRADLEY, LL.D., Class of 1836, and is maintained by his son, CHARLES BRADLEY, Esq., of the Class of 1876. It consists of a valuable Mathematical work, which is to be bestowed on the student of the Senior Class who shall pre-

sent the best solution of a set of Mathematical problems to be proposed to the class by the Professor of Mathematics before the close of the second term.

#### 5. Myron W. Smith Prizes.

These prizes were founded by LYNDON A. SMITH, M.D., of Newark, in the name of his son, Adjutant MYRON W. SMITH, who was a graduate of the College, and who gave his life in the late war to the cause of his country. They consist of the interest of \$500 (twenty-five dollars), proportionately appropriated to two medals, one of gold and the other of silver, which are to be awarded respectively to the best and second-best speakers of the Sophomore Class. Only those students who shall have pursued, in the College, the regular studies of the classical or a full scientific course from the beginning of the Freshman year, shall be allowed to contend for these prizes.

The competition for these medals shall take place before a committee of the Faculty, when the best and second-best speakers shall be selected, to whom the medals shall be awarded, and six others shall receive honorable mention in their order of excellence. The medals shall be presented at Commencement.

#### 6. Tunis Quick Prize in Spelling and English Grammar.

This prize, the gift of the late P. VANDERBILT SPADER, Esq., of New Brunswick, is the income of \$300, at 5 per centum, and is to be presented to that member of the Freshman Class, Classical or Scientific, who shall pass the best examination in Spelling and English Grammar.

The examination is to be conducted in writing by the Professor of English Literature, at as early a day as convenient in the second College term, and under such regulations as the Faculty may from time to time establish.

The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition. In case the prize be not awarded in any year, it is to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prize, are subject to change by the Board of Trustees.

#### **7. Peter Spader Prizes in Modern History.**

These prizes, the gift of the late P. VANDERBILT SPADER, Esq., are two in number, the income of \$400 and \$300, respectively, at 5 per centum, and are to be awarded to those members of the Sophomore Class, Classical or Scientific, who shall present the best essays on some subject in Modern History, selected by the Professor of History, with the approval of the Faculty.

The subject is to be announced at the close of the Freshman year, and the competing essays are to be handed in on or before the last Monday in May of the Sophomore year.

The committee annually appointed by the Faculty may decline to award these prizes, or either of them, for want of merit in the essays, or for failure of proper competition. In case the prizes be not awarded in any year, they are to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prizes are subject to change by the Board of Trustees.

Subject for 1893: "The Rise and Development of our Postal System."

**8. Appleton Memorial Prize in Moral Philosophy.**

This prize was founded by a gift of \$500, from the Rev. SAMUEL E. APPLETON, D.D., in the name of his mother, Mrs. ELIZABETH APPLETON. It consists of twenty-five dollars, the interest of the above sum, and will be given "to the member of the Senior Class who shall pass the best examination in Moral Philosophy."

**9. Bowser Engineering Thesis Prize.**

A prize consisting of a valuable Engineering work is given by Professor E. A. BOWSER, LL.D., to that member of the Engineering Section of the Senior Scientific Class who shall present the best thesis upon some Engineering subject at graduation.

**10. John Parker Winner Memorial Prize in Mental Philosophy.**

This prize consists of twenty-five dollars, given by JOHN WINNER, Jr., and his wife, in memory of their deceased son, JOHN PARKER WINNER. It will be open to competition for students in both the Classical and Scientific Sections who are pursuing the study of Mental Philosophy, and will be bestowed on the one who shall pass the best examination on some work assigned by the Professor of Metaphysics.

Work for 1893: Berkeley's Principles of Knowledge, Dr. Krauth's Edition, pages 72-122 and 193-281.

**11. William H. Van Doren Prize for the Best Essay on  
Christian Missions.**

This prize consists of twenty dollars, the gift of the Rev. WILLIAM H. VAN DOREN, D.D. It is open to competition for members of the Senior and Junior Classes in both sections, and for members of the Theological Seminary.

Subject for 1893, essay limited to 3,000 words: "Missions in China."

**12. Junior Exhibition.**

Eight members of the Junior Class are chosen each year, in equal numbers from the Peithessophian and Philoclean Literary Societies, who deliver original speeches at an exhibition held on the Tuesday evening preceding Commencement. The selection is made by a committee of three persons, of whom one is chosen by each Society and a third by the Faculty and is based upon relative excellence as writers and speakers.

A prize of twenty-five dollars, the gift of RALPH N. PERLEE, Esq., of New York City, is awarded by a special committee at the time of the exhibition to that orator who shall be adjudged the best writer and speaker among the contestants.

The Board of Trustees have adopted the following regulation concerning the Junior Exhibition, viz.: That after the Commencement of 1893 the eight speakers for the Junior Exhibition shall be chosen, on account of their

abilities in Composition and Elocution, from the entire Junior Class in the regular course, without regard to membership in the Peithessophian or Philoclean Society, by a committee appointed for that purpose by the Faculty.

**13. Hart Prize in English Literature.**

A prize of twenty-five dollars is offered to the members of the Sophomore Class for the best essay upon a subject in Literature; the theme is assigned by the Professor of that Department, and the prize is awarded by a committee appointed by him.

Subject for 1893: "John Keats."

**14. The Bussing Prizes for Extempore Speaking.**

Mrs. ANN BUSSING, of New York City, has given to the College \$1,000, the income of which (fifty dollars per annum) is to be expended each year for books, which shall be selected by the President of the College, and given as follows: The First Prize, of thirty dollars, to that member of the Senior Class who shall prove himself to be the best extemporaneous speaker; the Second Prize, twenty dollars, to the second-best extemporaneous speaker of the Senior Class. The prizes are to be awarded by the Faculty of the College, or by a committee whom they shall name, and shall be awarded after a public debate to be held in the latter part of the College year. In awarding the prizes, "strict attention shall be given to logical and forcible presentation of thought, full and accurate information as to matters of fact, and grace and effectiveness in delivery."



For the sake of training students in the clear expression of intelligent thought upon matters of public interest, each class has an exercise in extempore speaking twice in each term. The subject is announced to the class, and, after five minutes for thought, the members of the class discuss the subject or debate the question before a committee.

**15. Van Vechten Prize—Essay on Christian Missions.**

A. V. W. VAN VECHTEN, Esq., of New York, has founded, in honor of his mother, the late LOUISA VAN VECHTEN, and his father, Rev. Dr. SAMUEL VAN VECHTEN, a prize of sixty dollars, by the gift of \$1,000, the prize "to be given annually to that student of Rutgers College who shall be adjudged by the Faculty of the Theological Seminary of the Reformed Church of America, at New Brunswick, to have presented an article, original with himself, and the best submitted—the most conclusive and inspiring to strengthen faith in and love for Foreign Missions." Essays limited to 3,000 words, to be presented on or before May 1st of each year.

Subject for 1893: "The Prospects of Christianity among the Mohammedans."

**16. The Class of 1876 Prize Fund for the Encouragement of the Study of Political Philosophy.**

The Class of 1876 have given to the College five hundred dollars (\$500) as the foundation of a Prize Fund (which they express the hope that they may increase from time to time, until it shall be sufficiently large to establish a Fellowship), for the encouragement of the study of

Political Philosophy. The income of this fund is to be awarded each year "to that member of the Senior Class (either Classical or Scientific) who shall be adjudged entitled to it, \* \* \* on the basis of an original essay on some subject in Political Philosophy, assigned by the Professor of that science in the College, and upon a competitive examination in a text-book also selected by him;" the committee of award to consist of "three competent persons selected by the Faculty of the College, at least one member of the committee to be a member of the Class of 1876 as long as any may be living."

(a) Subject of essay for 1893: "Our National Legislature as Developed by Colonial Experience."

(b) An Examination on Frothingham's "Rise of the Republic."

#### 17. Upson Prize in American Literature.

For the encouragement of study in American Literature, a prize of fifty dollars is offered by the Librarian, to be awarded by a committee appointed by him, to that member of the Junior or Senior Class who shall write the best essay upon a subject assigned by him, and upon the following conditions:

First. The essay, of not more than 5,000 words, must be presented in writing upon the standard thesis paper of the College, with the understanding that the original copy is to be preserved in the College Library.

Second. Each competitor must sign his essay with a fictitious name, according to the general rules of the College, and hand it to the Librarian on or before May 1st, 1893.

Third. The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition.

Subject for 1893: "The Place of John Lothrop Motley among American Men of Letters."

#### **18. The Bradley Prize in Roman Law.**

This prize was founded by the Hon. JOSEPH P. BRADLEY, late Associate Justice of the Supreme Court of the United States, and is maintained by his son, CHARLES BRADLEY, Esq. It consists of a valuable work on Roman Law.

The subject of the essay for 1893 will be: "The Roman Law Respecting Injuries to Person, Property and Reputation."

The examination upon text will include Justinian's Institutes, lib. IV., tits. 3, 4, Dig. lib. IX., tit. 2, and Dig. lib. XLVII., tit. 10.

The prize may be competed for by Seniors and Juniors.

#### **19. The Class of 1866 Prize for Attainments in Electrical Science.**

The Class of 1866, being the Centennial Class after the grant of the first charter, has established a prize of fifty dollars, to be awarded to that member of each graduating class who has taken a full course leading to the degree A.B. or B.S., including the higher mathematics and physical laboratory practice, and who has shown, in the judgment of the Faculty, the greatest degree of proficiency in the science of Electricity.

A special examination, conducted by an appropriate committee of the Faculty, will be held Saturday, May 20th, 1893, at 2 P. M., to select the recipient of the prize. If, in the opinion of the committee, none of the competitors deserve the prize, it will be withheld.

**20. The Delta Phi Senior Orator Prize.**

A prize of twenty-five dollars is offered by the Epsilon Chapter of the Delta Phi Fraternity to that member of the Senior Class who shall write and pronounce the best English Oration.

The basis of award of this prize shall be as follows:

Essays shall be written upon any one of certain subjects designated by the Faculty and submitted to a committee thereof.

From these essays, the best, not to exceed five in number, shall be chosen, and their writers having given these essays such form as may best suit the purpose, shall pronounce them in public before a committee appointed by the Faculty, who shall thereupon adjudge the prize.

**21. The Luther Laflin Memorial Prize in Metaphysics.**

This prize consists of \$100, given by LUTHER LAFLIN KELLOGG, Esq., of New York City, in memory of his grandfather, LUTHER LAFLIN, deceased.

It will be open to students of the Junior Class in both the Classical and Scientific sections, and will be bestowed on the one who shall pass the best examination on some work assigned by the Professor of Metaphysics.

Work for 1893: "Text-Book to Kant. The Critique of Pure Reason: *Æsthetic*, Categories, Schematism. Translation, Reproduction, Commentary, Index." By James Hutchinson Stirling. LL.D.

## 22. Barbour Prizes in Speaking.

These prizes, two in number, of the value of \$15 and \$10 respectively, are offered by the Instructor in Elocution. The eight members of the Freshman Class of either section in regular course who shall stand highest in Elocution during the entire year may compete before a committee appointed by the Faculty.

The date and conditions of trial and award will be announced during the second term.

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## LIBRARY.

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The Library of the College, containing 28,000 volumes, is open for consultation during each term as follows: On Mondays, Tuesdays, Wednesdays, Thursdays and Fridays, from 8 to 8:40 A. M., and from 12 M. to 12:50 P. M., and from 2 P. M. to 4:30 P. M.; on Saturdays from 9 A. M. to 12:50 P. M., and from 2 to 4:30 P. M. Students are allowed free access to the books, and are encouraged to become familiar with the proper methods of using a library for literary work.

In 1887, the late P. VANDERBILT SPADER, Esq., of New

Brunswick (a member of the Class of 1849), gave to the College his personal library, valued at \$15,000, and consisting of about 5,000 books, among them many very valuable art volumes, and collections especially rich in State and local history, and in books of reference. By his will the College has received \$10,000, the income of which is to be expended for the maintenance and increase of the P. Vanderbilt Spader Library Gift.

By the gift of a permanent fund of \$1,000 from JAMES SUYDAM, Esq., supplemented by gifts from other sources, the library is supplied with the leading periodical publications in the various departments.

By the courtesy of the Theological Seminary of the Reformed Church, the Sage Library of more than 40,000 volumes is opened to the students of Rutgers for consultation; and under certain limitations books are drawn from it as well. It is within four minutes' walk of the College campus.

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## MUSEUM AND APPARATUS.

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The Trustees solicit contributions from the friends of the College to the collections of the Museum. It is their wish to increase greatly the present valuable collections by additions in all departments. Donations of specimens illustrating Geology, Mineralogy, Natural History, Numismatics and Antiquities, and the Industrial Arts, are earnestly requested. Ample rooms are provided in Geological Hall for the proper preservation and display of such speci-

mens. By the kindness of numerous friends, suitable cases have been provided to receive the collections which the College already possesses, and they are now being arranged as rapidly as circumstances will allow.

During the past year valuable additions have been made as follows: From Professor DAVID MURRAY, LL.D., a collection of minerals and Japanese curiosities; from FREDERICK A. CANFIELD, Esq., '70, a collection of zinc minerals from Missouri; from JOSEPH A. VAN MATER, '80, a set of cores from the diamond drill holes bored at Franklin, N. J., and which well exhibit the geological formation of that region. Professor CHESTER's private collection of minerals has also been deposited in the museum and adds greatly to the material for illustrating the lectures in Mineralogy.

The apparatus of the College for illustrating the various branches of science is extensive and serviceable. It has been obtained as the wants of the classes demanded, and comprises many recent additions to the Engineering, Chemical and Philosophical apparatus. The students in Analytical Chemistry are provided with the requisite facilities for making analyses. The arrangements for these departments in the buildings recently erected are of the most ample and convenient description.

**The Thomas L. Janeway, M.D., Memorial Collection**

to illustrate Classical Archæology, is the gift of the heirs of Dr. THOMAS L. JANEWAY, of the Class of 1863.

It already includes (1) eight casts from marbles typical of the chief periods in the history of sculpture. These

casts were manufactured by Brucciani & Co., of London. (2) Five hundred casts from engraved gems (cameos and intaglios) and coins, Greek and Roman. These were selected with an eye both to the study of the development of the art and to the especially full illustration of its best achievements. The workmanship on these casts is that of Augustus Ready, of the British Museum. (3) Eight hundred stereopticon slides, of which all but eighty-two were made by the well-known Levy, of Paris. (4) One thousand photographs and restorations. Among the photographers are Bonfils, of Beirut; Sommer, of Naples; Anderson, of Rome; Mansell, of London; Lombardi, of London; Quaas, of Berlin; Hauteœur, of Paris, etc., etc.

The collection, made in Europe by a member of the College Faculty, is designed to illustrate the topography, art, life and literature of Ancient Greece and Rome, and for this purpose is used constantly by College classes.

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## CATALOGUES.

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Former students of the College, whether graduates or not, are earnestly requested to keep the College informed of any change in their address or occupation, of works published, offices held, etc., both to facilitate the sending of the annual catalogue, and to furnish material for general catalogues, when printed. Catalogues of the College, etc., will be sent to alumni or friends of the College who send to the Registrar their addresses, for this purpose.



## REGISTER.

## 1. SOPHOMORE ORATORS, CLASS OF 1894.

PHILIP COOK THOMAS.

CHARLES MORISON DIXON.

The following are named in the order of their appointment  
according to merit:

OTTO LEOPOLD FREDERICK MOHN.  
HOLMES VAN MATER DENNIS, JR.  
EDGAR IRELAND MCCULLY.

WILLIAM EDGAR COMPTON.  
HOWARD DE MOTT.  
DANIEL HAND  
THOMAS FRENCH RUSSUM.

## 2. JUNIOR ORATORS, CLASS OF 1893.

JUNIOR EXHIBITION, JUNE 21, 1892.

PEITHLESSOPHIAN SOCIETY.

PHILOCLEAN SOCIETY.

ISAAC MESSLER.  
LOUIS HOWELL METTLER.  
FRANCIS BAIRD SANFORD.  
ALBERT HENRY SCHLIEDER.

HENRY CHARLES CUSSLER.  
RICHARD SWANN LULL.  
BURTON STEARNS PHILBROOK.  
ELLIS ROBERT WOODRUFF.

## 3. GRADUATING EXERCISES, CLASS OF 1892.

COMMENCEMENT, JUNE 22, 1892.

## HONORS.

FRANK ROBERTSON VAN HORN, . . . . . Johnsonburg, N. J.

Valedictory, First Honor.

WILLIAM JACOB COOPER, . . . . . New Brunswick, N. J.

German Salutatory, Second Honor.

GEORGE COLFAX BULLOCK, . . . . . Jacobstown, N. J.

Philosophical Oration, Third Honor.

HAROLD LYMAN HOYT, . . . . . New Brunswick, N. J.

Scientific Oration, Fourth Honor.

ROBERT EMMET FARLEY, . . . . . Fort Plain, N. Y.

Rhetorical Honor.

## ORATIONS.

JAMES WESTFALL THOMPSON, . . . . . New Brunswick, N. J.

PHILIP MILLEDOLER BRETT, . . . . . Jersey City, N. J.

ROBERT SUMNER WINN, . . . . . Madison, Wis.

## MASTER'S ORATION.

CHARLES JUNSON SCUDDER, . . . . . New York City.

## 4. DEGREES CONFERRED.

## Degree of Bachelor of Arts Conferred on Candidates in Course.

WINFRED RUGAN ACKERT,  
ALBERT DOBRANCE BALDWIN,  
JOSEPH FREDERICK BERG,  
CLARENCE HORNBECK BONNELL,  
PHILIP MILLEDOLER BRETT,  
HENRY ROBINSON BRISTOL,  
JAMES DICKSON CARR,  
THOMAS WESTON CHESTER,  
GARRETT MILTON CONOVER,  
DRURY WALLS COOPER,  
CHARLES EDWARD CORWIN,  
HARRY KIMBALL DAVIS,  
HARRY THORNTON DAYTON,  
CHALMERS PETER DYKE,

ROBERT EMMET FARLEY,  
GILBERT TERBELL GALE,  
AMOS HOPPOCK HAINES,  
JESSE CHARLES HAZZARD,  
GEORGE DE WITT KELSO,  
ISAAC WILLIAM LOTT,  
MITSUYE OI,  
HENRY WEMPLE PAWIING,  
WALTER TRACY SCUDDER,  
WILLIAM CARMAN SHERWOOD,  
JAMES BISHOP THOMAS,  
JAMES WESTFALL THOMPSON,  
FRANK VOORHEES,  
ROBERT SUMNER WINN.

## Degree of Bachelor of Science Conferred on Candidates in Course.

ANDREW HALL BERRY,  
EUGENE BETTS,  
HOLMES EARLE BRUERRE,  
GEORGE COLFAX BULLOCK,  
WILLIAM JACOB COOPER,  
PETER CONOVER FIELD,  
HAROLD LYMAN HOYT,

J. LIVINGSTON RUTGERS MORGAN,  
WILLIAM THOMAS MORRISON,  
WILLIAM HEULINGS STAFFORD,  
FRANK ROBERTSON VAN HORN,  
GARRETT SCOTT VOORHEES,  
HENRY EDWIN WATERS,  
DANIEL GREGORY WRIGHT,

GEORGE HAMPTON WYCKOFF.

## Degree of Master of Arts Conferred.

BYRON CUMMINGS, '89,  
CHARLES MAAR, '89,

HENRY LIVINGSTON RUPERT, '89,  
CHARLES JUDSON SCUDDER, '89,

ELIAS WOBTMAN THOMPSON, '89.

## Degree of Master of Science Conferred.

HARRY ATWATER SMITH, '87,

JOSEPH SCOTT STILLWELL, '89.

## Degree of Civil Engineer Conferred.

EDWARD INGELOW PITMAN, '77,

ALBERT CORNELIUS AREND, '89,  
EDWARD HOWELL, '89.

## Honorary Degrees Conferred.

A.M. HON. EDWARD ELSWORTH, . . . . . Poughkeepsie, N. Y.  
A.M. HENRY CADMUS STRYKER, . . . . . Minneapolis, Minn.  
PH.D. JOHN MILTON BIGELOW, M.D., . . . . . Albany, N. Y.  
PH.D. ELIOT ROBERTSON PAYSON, A.M., . . . . . New Brunswick, N. J.  
L.H.D. HENRY PITT WARREN, A.M., . . . . . Albany, N. Y.  
LL.D. REV. DAVID D. DEMAREST, D.D., . . . . . New Brunswick, N. J.  
D.D. REV. CHARLES HUBBARD POOL, A.M., . . . . . Somerville, N. J.  
D.D. REV. JAMES FORSYTH RIGGS, . . . . . Bayonne, N. J.  
D.D. REV. JAMES WELLS, . . . . . Glasgow, Scotland.  
D.D. REV. JOHN KNOX ALLEN, A.M., . . . . . Tarrytown, N. Y.  
D.D. REV. JOSEPH RANKIN DURYEE, A.M., . . . . . New York City.

5. PRIZES AWARDED.

COMMENCEMENT, 1892.

SENIOR PRIZES.

Suydam Prize for Composition, . . . . .	JAMES B. THOMAS.
Suydam Prize for Natural Science, . . . . .	EUGENE BETTS.
Brodhead Classical Prize, . . . . .	DRURY W. COOPER.
Bradley Mathematical Prize, . . . . .	HAROLD L. HOYT.
Appleton Prize for Moral Philosophy, . . . . .	ISAAC W. LOTT.
Bowser Prize for Best Engineering Thesis, . . . . .	GEORGE C. BULLOCK.
Liebig Prize for Best Chemical Thesis, . . . . .	J. L. R. MORGAN.
Bussing Prize for Extemporaneous Debate, 1st, . . . . .	R. E. FARLEY.
Bussing Prize for Extemporaneous Debate, 2d, . . . . .	J. D. CARR.
Class '76 Political Philosophy Prize, . . . . .	HARRY K. DAVIS.
Van Doren Prize for Essay on Christian Missions, . . . . .	J. W. THOMPSON.
Van Vechten Prize for Essay on Foreign Missions, . . . . .	C. E. CORWIN.
Upson American Literature Prize, . . . . .	J. W. THOMPSON.
Bradley Prize in Roman Law, . . . . .	HARRY K. DAVIS.
Class '66 Electrical Science Prize, . . . . .	EUGENE BETTS.
Delta Phi Senior Orator Prize, . . . . .	HARRY K. DAVIS.

JUNIOR PRIZES.

John Parker Winner Memorial Prize for Mental Philosophy, . . . . .	R. D. MERRILL.
Perlee Junior Orator Prize, . . . . .	A. H. SCHLIEDER.

SOPHOMORE PRIZES.

Myron W. Smith Prize for Declamation, 1st, . . . . .	PHILIP C. THOMAS.
Myron W. Smith Prize for Declamation, 2d, . . . . .	CHARLES M. DIXON.
Hart English Literature Prize, . . . . .	JOHN H. THOMPSON.
Spader Prize for Modern History, 1st, . . . . .	JOHN H. THOMPSON.
Spader Prize for Modern History, 2d, . . . . .	JOHN A. SABLES.

FRESHMAN PRIZES.

Tunis Quick Grammar and Spelling Prize, . . . . .	DAVID CAHART.
Sloan Entrance Examination Prize, 1st, . . . . .	DAVID CAHART.
Sloan Entrance Examination Prize, 2d, . . . . .	HERMAN C. WEBER.

6. CLASS-DAY EXERCISES.

CHAPEL.

President, . . . . .	R. E. FARLEY, Fort Plain, N. Y.
Orator, . . . . .	P. M. BRETT, Jersey City, N. J.
Poet, . . . . .	J. W. THOMPSON, New Brunswick, N. J.
Historian, . . . . .	C. P. DYKE, Grand Rapids, Mich.
Presenter of Class Memorial, . . . . .	G. T. GALE, Bayonne, N. J.
Prophet, . . . . .	A. D. BALDWIN, Newark, N. J.
Address to Lower Classmen, . . . . .	W. T. SCUDDER, Tindivivan, India.
Presenter of Mementos, . . . . .	J. F. BERG, Brooklyn, N. Y.



## DISTINGUISHED STUDENTS IN MILITARY DEPARTMENT.

In accordance with orders of the War Department, on the graduation of every class the names of such students as have shown special aptitude for military service will be reported to the Adjutant-General of the Army and to the Adjutant-General of New Jersey; and the names of the three most distinguished students in Military Science and Tactics will be inserted in the U. S. Army Register and published in general orders.

The names of the students of the Class of 1892 who were so reported to the Adjutant-General of the Army and the Adjutant-General of New Jersey, were:

A. HALL BERRY, Cadet Captain.  
 F. CONOVER FIELD, Cadet Captain.  
 WILLIAM H. STAFFORD, Cadet First Lieutenant and Adjutant.

The names of the following will appear in the Army Register for 1893:

G. SCOTT VOORHEES, Cadet First Lieutenant.  
 WILLIAM H. STAFFORD, Cadet First Lieutenant and Adjutant.  
 A. HALL BERRY, Cadet Captain.

## 8. ALUMNI ASSOCIATION.

## OFFICERS FOR THE YEAR 1892-'93.

President,	HON. N. W. VOORHEES, '47.
	L. BEVIER, JR., '78.
Vice Presidents,	REV. C. H. POOL, D.D., '68.
	REV. J. P. SEARLE, '76.
	REV. W. J. LEGGETT, '72.
Secretary,	F. P. HILL, '83.
Treasurer,	T. B. BOORARM, '81.
Necrologist,	I. S. UPSON, '81.
Chief Inspector of Election of Alumni Trustees,	H. A. NEILSON, '78.
Assistant Inspectors,	J. E. ELMENDORF, '78.
	G. B. FIELDER, '81.
Orator Primarius,	D. BOOKSTAVEE, '46.
Orator Secundus,	REV. W. S. CRANMER, '82.

**RUTGERS COLLEGE PREPARATORY SCHOOL.**

FOUNDED 1766.

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**E. R. PAYSON, PH.D., HEAD-MASTER.**

---

While the careful preparation for Colleges and Scientific Schools will be the chief aim of this School, attention will also be paid to students desiring to prepare for business.

The number of pupils at the "Home" is limited to forty, and each boy will receive individual attention and care.

**LOCATION.**

The location of a thorough preparatory school in a city like New Brunswick is most fortunate. On the Pennsylvania railroad, it is easy of access, being only about one hour from New York, and one and one-half hours from Philadelphia. Trains are passing at all hours of the day. The influences of a college town are excellent for intellectual work. Often parents send their sons to be trained in such a town, to cultivate and stimulate a desire for a more advanced course of study.

New Brunswick is a most healthful location.

**ADMISSION.**

Pupils will be received at any time. It is earnestly urged, however, both for the individual and the class, that pupils enter promptly at the beginning of the year or quarter.

Each pupil will bring with him a certificate of good moral character from the last school he attended, or from the pastor of the church he has attended.

**INTERMEDIATE AND PRIMARY DEPARTMENTS.**

The work in these departments is designed to prepare boys of the youngest school age for the more advanced work of the school. The number of pupils is limited. Special care is taken in regard to the morals and language of each boy.

The work of these departments will be continued by Miss ESTHER A. ANDREWS, who has, in a marked degree, won the love and esteem of those under her care. Parents can place their boys with Miss Andrews in perfect confidence.

For any further information, address E. R. PAYSON, Ph.D., Head-Master, Rutgers College Preparatory School, New Brunswick, N. J.

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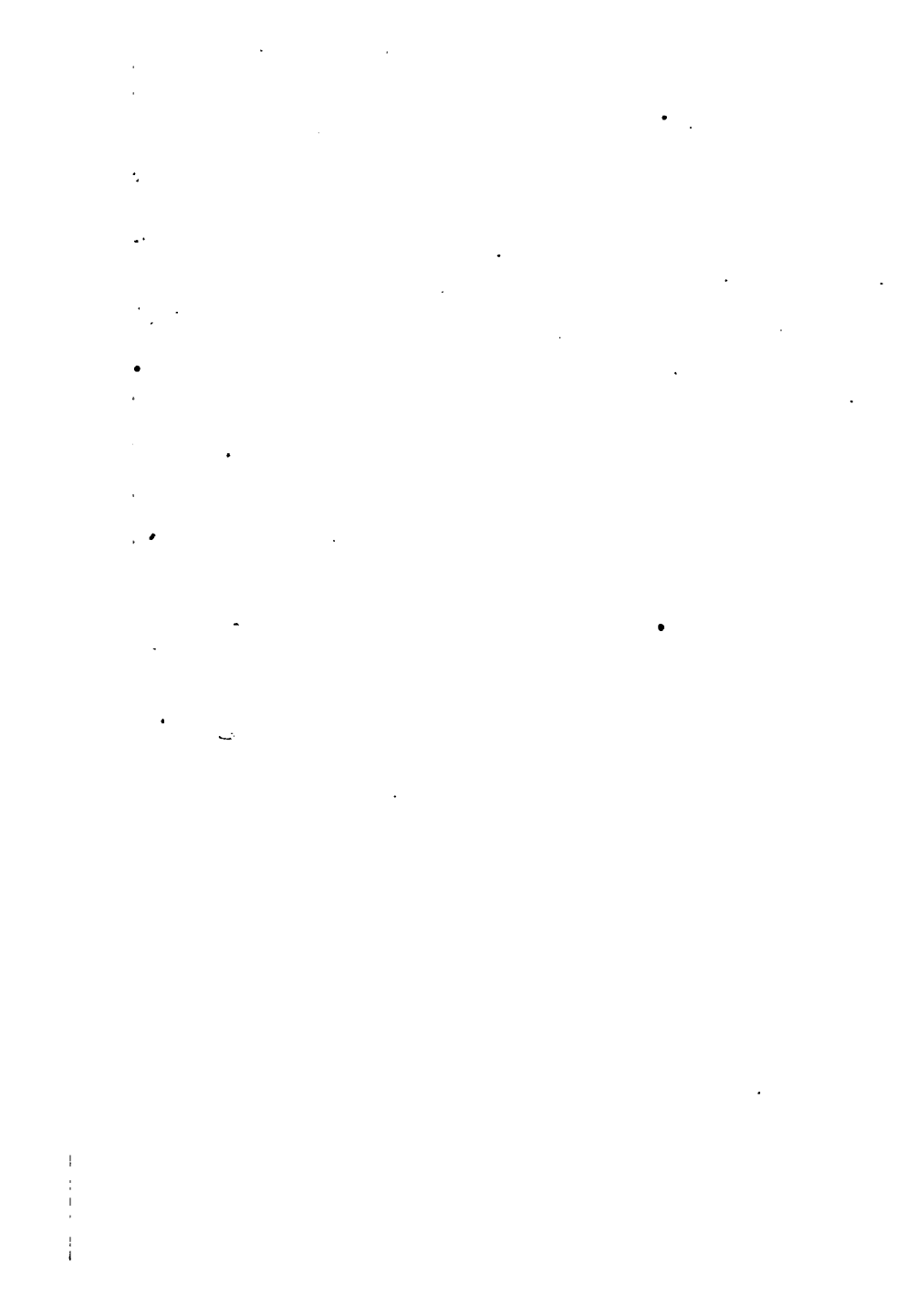
# LOGUE

# COLLEGE

ROCKSWICK, N. J.



93-'94



CATALOGUE  
OF THE  
OFFICERS AND STUDENTS  
OF  
RUTGERS COLLEGE  
AT  
NEW BRUNSWICK, N. J.  
1893-94.

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CHARTERED AS QUEEN'S COLLEGE, A. D. 1766.

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PRINTED FOR THE COLLEGE.

1898.

## CALENDAR.

## 1893.

SEPTEMBER 19, Tuesday: Examinations for admission.  
 SEPTEMBER 20, Wednesday: First Term begins. Recitations.  
 OCTOBER 7, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 31, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOV. 29-DEC. 4, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving Recess.  
 DECEMBER 12-19, Wednesday-Tuesday: Examinations. First Term ends.  
 DEC. 19-JAN. 3, Tuesday-Wednesday, 8:40 A. M.: Christmas Vacation.

## 1894.

JANUARY 3, Wednesday: Second Term begins. Recitations.  
 JANUARY 25, Thursday: Day of Prayer for Colleges.  
 FEBRUARY 22, Thursday: Washington's Birthday.  
 MARCH 6, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 MAR. 28-APR. 3, Wednesday-Tuesday: Examinations. Second Term ends.  
 APRIL 3-11, Tuesday-Wednesday, 8:40 A. M.: Spring Vacation.  
 APRIL 11, Wednesday: Third Term begins. Recitations.  
 MAY 21-23, Monday-Wednesday: Senior Final Examinations.  
 JUNE 11-15, Monday-Friday: Examinations of Three Lower Classes.  
 JUNE 15, Friday: Reading of Theses by Scientific Seniors, 2 P. M.  
 JUNE 15, 16, Friday, 10 A. M., and Saturday: Examinations for admission.  
 JUNE 17, Sunday: Baccalaureate Sermon, 7:30 P. M.  
 JUNE 18, Monday:  
 Exhibition Drill, Rutgers Corps Cadets, 11 A. M.  
 Class-Day Exercises, 3 P. M.  
 JUNE 19, Tuesday:  
 Junior Exhibition, 8 P. M.  
 Commencement Meeting of the Board of Trustees, 10 A. M.  
 Annual Meeting of the Alumni, 10 A. M.  
 JUNE 19, Tuesday: 127th ANNUAL COMMENCEMENT, 8 P. M.  
 JUNE 19-SEPT. 18, Wednesday-Tuesday: Long Vacation.  
 SEPTEMBER 18, Tuesday:  
 Examinations for admission, 10 A. M.  
 Examinations for removal of June Conditions, 10 A. M.  
 SEPTEMBER 19, Wednesday: First Term begins. Recitations.  
 OCTOBER 6, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 30, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOV. 29-DEC. 3, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving Recess.  
 DECEMBER 12-18, Wednesday-Tuesday: Examinations. First Term ends.  
 DEC. 18-JAN. 2, Tuesday-Wednesday, 8:40 A. M.: Christmas Vacation.

## 1895.

JANUARY 2, Wednesday: Second Term begins. Recitations.

## TRUSTEES.

1893-94.

## EX-OFFICIO.

HIS EXCELLENCY GEORGE T. WERTS,	JERSEY CITY.
<i>Governor of the State of New Jersey.</i>	
HON. MERCER BEASLEY, LL.D.,	TRENTON.
<i>Chief Justice of the State of New Jersey.</i>	
HON. JOHN P. STOCKTON, LL.D.,	TRENTON.
<i>Attorney-General of the State of New Jersey.</i>	

## BY ELECTION.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
AUSTIN SCOTT, PH.D., LL.D., <i>President of the College.</i>	New Brunswick,	Nov. 25, 1890.
*REV. T. E. VERMILYE, D.D., LL.D.,	New York City,	July 24, 1849.
HON. JOHN HOPPER,	Paterson,	July 22, 1851.
MAURICE E. VIELE, ESQ.,	Albany, N. Y.,	July 27, 1853.
REV. DAVID D. DEMAREST, D.D., LL.D.,	New Brunswick,	April 18, 1858.
HENRY L. JANEWAY, ESQ.,	New Brunswick,	April 8, 1862.
REV. TALBOT W. CHAMBERS, D.D., LL.D.,	New York City, 70 West 36th St.	June 17, 1863.
REV. JOACHIM ELMENDORF, D.D.,	New York City, 85 Mt. Morris Ave.	April 14, 1869.
REV. PAUL D. VAN CLEEF, D.D.,	Jersey City,	April 14, 1869.
SAMUEL SLOAN, ESQ.,	New York City, 26 Exchange Place.	June 20, 1871.
HON. GEORGE C. LUDLOW,	New Brunswick,	June 17, 1873.
HON. WILLIAM A. NEWELL, M.D., LL.D.,	Olympia, Wash.,	June 17, 1873.
REV. JOHN GASTON, D.D.,	Passaic,	June 20, 1876.
HON. HENRY W. BOOKSTAVEE, LL.D.,	New York City, 14 East 67th St.	June 20, 1876.
ROBERT F. BALLANTINE, ESQ.,	Newark,	June 20, 1876.
WILLIAM CLARK, ESQ.,	Newark,	Oct. 29, 1878.
HON. GEORGE H. SHARPE,	Kingston, N. Y.,	March 4, 1879.

\* Died March 17th, 1893.

## RUTGERS COLLEGE.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
DAVID BINGHAM, Esq.,	East Orange,	March 7, 1882.
HENRY R. BALDWIN, M.D., LL.D.,	New Brunswick,	June 17, 1884.
FREDERICK FRELINGHUYSEN, Esq.,	Newark,	June 16, 1885.
ERNEST J. MILLER, Esq.,	Albany, N. Y.,	June 16, 1885.
HON. JONATHAN DIXON, LL.D.,	Jersey City,	June 22, 1886.
JAMES NEILSON, Esq.,	New Brunswick,	June 22, 1886.
REV. RODERICK TERRY, D.D.,	New York City, 169 Madison Ave.	June 22, 1886.
TUNIS G. BERGEN, PH.D.,	Brooklyn, N. Y., 127 Pierpont St.	Oct. 25, 1887.
REV. EDWARD B. COE, D.D., LL.D.,	New York City, 42 West 52d St.	Oct. 25, 1887.
ELBERT B. MONROE, Esq.,	Tarrytown, N. Y.,	Oct. 25, 1887.
REV. JOHN B. DRURY, D.D.,	New Brunswick,	Oct. 25, 1887.
REV. JAMES LE FEVRE, D.D.,	Middlebush,	June 16, 1888.
FREDERICK J. COLLIER, Esq.,	Hudson, N. Y.,	June 16, 1891.
ALEXANDER T. VAN NEST, Esq.,	New York City, 31 West 37th St.	June 16, 1891.
PAUL COOK, Esq.,	Troy, N. Y.,	June 16, 1891.
DAVID MURRAY, PH.D., LL.D.,	New Brunswick,	March 1, 1892.
HON. GARRET D. W. VROOM,	Trenton,	June 21, 1892.
J. BAYARD KIRKPATRICK, Esq.,	New Brunswick,	June 21, 1892.
CHARLES T. VAN SANTVOORD, Esq.,	New York City, 88 West 90th St.	March 7, 1893.

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REV. DAVID D. DEMAREST, D.D., LL.D., . . . New Brunswick.  
*Secretary of the Board.*

FREDERICK FRELINGHUYSEN, Esq., . . . Newark.  
*Treasurer of the Board.*

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## STATED MEETINGS OF THE BOARD.

Last Tuesday in October, at 2 o'clock P. M.

First Tuesday in March, at 2 o'clock P. M.

Tuesday before Commencement, at 10 o'clock A. M.

FACULTY.

---

AUSTIN SCOTT, PH.D., LL.D.,  
PRESIDENT,

*VOORHEES Professor of History and Political Science.*  
24 Livingston Avenue.

\*REV. THEODORE SANDFORD DOOLITTLE, D.D., LL.D.,  
VICE PRESIDENT.

*COLLEGIATE CHURCH Professor of Rhetoric, Logic and Mental Philosophy.*

REV. JACOB COOPER, D.D., D.C.L.,  
*COLLEGIATE CHURCH Professor of Logic and Mental Philosophy.*  
108 George Street.

REV. CARL MEYER, D.D.,  
*Professor of Modern Languages and Literatures.*  
245 Easton Avenue.

FRANCIS CUYLER VAN DYCK, PH.D.,  
*Professor of Physics and Experimental Mechanics.*  
84 College Avenue.

EDWARD ALBERT BOWSER, C.E., LL.D.,  
*Professor of Mathematics and Engineering.*  
Queen's College.

REV. CHARLES EDWARD HART, D.D.,  
*Professor of the English Language and Literature.*  
88 Livingston Avenue.

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\*Died April 18th, 1893.

## RUTGERS COLLEGE.

LOUIS BEVIER, JR., PH.D.,

*Professor of the Greek Language and Literature.**Secretary of the Extension Department.*

Bishop Place.

EDGAR SOLOMON SHUMWAY, PH.D.,

*Professor of the Latin Language and Literature.*

211 Livingston Avenue.

ALFRED ALEXANDER TITSWORTH, M.S., C.E.,

*Professor of Graphics and Mathematics.*

590 George Street.

JULIUS NELSON, PH.D.,

*Professor of Biology.*

Adelaide Avenue, Highland Park.

BYRON DAVID HALSTED, Sc.D.,

*Professor of Botany and Horticulture.*

64 College Avenue.

JOHN BERNHARD SMITH, Sc.D.,

*Professor of Entomology.*

81 Easton Avenue.

EDWARD BURNETT VOORHEES, A.M.,

*Professor of Agriculture.*

83 Easton Avenue.

REV. WILLIAM RANKIN DURYEE, D.D.,

THEODORE FRELINGHUYSEN *Professor of Ethics, Evidences of Christianity  
and the English Bible.*

17 Union Street.



RUTGERS COLLEGE

7

ALBERT HUNTINGTON CHESTER, E.M., Ph.D., Sc.D.,

*Professor of Chemistry and Mineralogy.*

*Curator of the Museum.*

35 College Avenue.

JOHN JAMES BRERETON, 1st Lieutenant, 24th U. S. Infantry,

*Professor of Military Science and Tactics.*

361 George Street.

JOHN CHARLES VAN DYKE, L.H.D.,

*Professor of the History of Art.*

Seminary Campus.

ROBERT WOODWORTH PRENTISS, M.S.,

*Professor of Mathematics and Astronomy.*

96 Easton Avenue.

ELIOT ROBERTSON PAYMON, Ph.D.,

*Professor of the History and Art of Teaching.*

Hamilton Street.

EDWARD LUTHER STEVENSON, Ph.D.,

*Professor of History.*

Seminary Place.

IRVING STRONG UPSON, A.M.,

*Librarian and Registrar.*

*Secretary of the Faculty.*

118 Bayard Street.

CLARENCE LIVINGSTON SPEYERS, Ph.B.,

*Associate Professor of Chemistry.*

361 George Street.

THOMAS LOGIE, Ph.D.,

*Associate Professor of Romance Languages.*

60 College Avenue.

## RUTGERS COLLEGE.

EDWARD LIVINGSTON BARBOUR,

*Instructor in Elocution.*  
210 Townsend Street.

WILLIAM EUGENE BREAZEALE, M.M.P.,

*Instructor in Mathematics.*  
96 Easton Avenue.

EUGENE BETTS, B.S.,

*Instructor in Electricity and Physics.*  
91 Bayard Street.

WILLIAM SHIELDS MYERS, B.S., F.C.S.,

*Assistant in Chemistry.*  
98 Easton Avenue.

WOLDEMAR LOEHER,

*Instructor in Modern Languages.*  
95 Bayard Street.

LINCOLN ROBINSON GIBBS, A.M.,

*Instructor in English Literature.*  
*Extension Lecturer in English Literature.*  
356 George Street.

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The names of the Faculty, after that of the President, are arranged in groups. The Professors, according to seniority of appointment; the Librarian and Registrar; the Associate Professors and Instructors, in the order of their respective appointments.

# CATALOGUE OF STUDENTS

FOR THE YEAR BEGINNING SEPTEMBER 20, 1893.

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## GRADUATE STUDENTS.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
ASHER ATKINSON, C.E., Rutgers Scientific School. <i>Astronomy.</i>	New Brunswick,	11 Hardenbergh St.
JAMES ALBERT KELSEY, M.S., Iowa Agricultural College. <i>Botany.</i>	Dunlap, Ia.,	147 College Ave.

## SENIOR CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
FREDERICK JACOB BARNY,	Bardonia, N. Y.,	33 Hertzog Hall.
WILLIAM EDGAR COMPTON,	New Brunswick,	204 Somerset St.
FRANKLIN RICHMOND CUSHMAN,	Glocester, R. I.,	Franklin Park.
HOLMES VAN MATER DENNIS, JR.,	Freehold,	102 Winants Hall.
CHARLES MORISON DIXON,	New Brunswick,	87 New St.
ARTHUR EUGENE FIELD,	New Marlboro, Mass.,	18 Hertzog Hall.
FREDERICK CHRISTOPHER GRANT,	Plainfield,	Plainfield.
FREDERICK NELSON JACOBUS,	Newark,	Newark.
WILLIAM BOTSFORD JUDD,	Cranford,	Chi Psi Lodge,
EDGAR IRELAND MCCULLY,	Little Falls,	25 Hertzog Hall.
HENRY MILLER,	New Brunswick,	117 Throop Ave.
OTTO LEOPOLD FREDERICK MOHN,	Beverly,	Delta Phi House.
EDMUND PHILIP NISCHWITZ,	Warrenville,	136 Winants Hall.
BURTON STEARNS PHILBROOK,	Jersey City,	211 Livingston Ave.
JOHN AUGUSTUS SABLES,	Stelton,	Stelton.
PHILIP COOK THOMAS,	New Brunswick,	93 Easton Ave.
JOHN HENRY THOMPSON,	New Brunswick,	46 Hertzog Hall.
IRVING S. TOMPKINS,	Boonton,	41 Hertzog Hall.
FRANCIS CUYLER VAN DYCK, JR.,	New Brunswick,	84 College Ave.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
CHARLES FERDINAND BERGER,	Newark,	124 Bayard St.
HOWARD DE MOTT,	Hackensack,	Delta U. House.
JOHN VAN NOSTRAND DORR,	Orange,	Zeta Psi House.
ABRAHAM CHARLES FOX,	Westville,	55 Winants Hall.
MOUNT DE BOW GRAVATT,	Clarksburgh.	College Farm.
DANIEL HAND,	Cape May C. H.,	Chi Phi House.
HOWARD GODFREY HARRIS,	Bakersville,	54 New St.
RAYMOND STEELE HARRISON,	Verona,	127 Bayard St.
DAVID LAYTON,	Liberty Corner,	55 Winants Hall.
ISAAC ARTHUR LEE,	New Brunswick,	162 Somerset St.
WARREN SMITH MITCHELL,	Vineland,	26 Division St.
GEORGE EDWARD TRACY, JR.,	Bayonne City,	108 Winants Hall.
LEONARD LOVEJOY WETMORE,	Englewood,	Zeta Psi House.
JOSEPH JOHNSON YATES, JR.,	Elizabeth,	Elizabeth.

## JUNIOR CLASS.

---

 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
DAVID CAHART,	Rahway,	Rahway.
FRANK CORNELL EATON,	Ellenville, N. Y.,	116 Winants Hall.
CHARLES WESLEY GULICK,	New Brunswick,	127 Bayard St.
HENRY UNDERHILL HART,	Neshanic,	Chi Phi House.
GEORGE JACOB JANEWAY,	New Brunswick,	192 Livingston Ave.
FREDERICK WILLIAM JOHANKNECHT,	Jamaica, N. Y.,	45 Hertzog Hall.
DWIGHT CHAPIN LEFFERTS,	Flatbush, N. Y.,	Zeta Psi House.
JOHN CONANT LOUD,	Brooklyn, N. Y.,	40 Winants Hall.
GEORGE SULLIVAN LUDLOW,	New Brunswick,	95 Bayard St.
WARREN CLARK VAN SLYKE,	Kingston, N. Y.,	40 Winants Hall.
HERMAN CHARLES WEBER,	Brooklyn, N. Y.,	45 Hertzog Hall.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
LEWIS AUGUSTUS ADAMS,	Lower Bank,	College Farm.
LOUIS DEREY AYRES,	Bayonne City,	Chi Psi Lodge.
JOHN GARRETSON BLACKWELL,	Franklin Park,	Chi Phi House.
EUGENE BOBERT,	Harrington,	Delta U. House.
JOHN HENRY CARNES,	Jersey City,	122 Bayard St.
ABRAHAM SCHUYLER CLARK,	New Brunswick,	18 Kirkpatrick St.
EDGAR STANLEY CONKLIN,	Pekin, Ill.,	Delta U. House.
CHARLES E. CONOVER,	Manalapan,	College Farm.
*BERGEN DAVIS,	White House Station.	
CHARLES MEIRS DENISE,	Allentown,	Chi Psi Lodge.
FRANK VREELAND DOBBINS,	Rahway,	Rahway.
FREDERICK WILLIAMS ELLIS,	Cranford,	Cranford.
JOHN MULFORD ENRIGHT,	Freehold,	Chi Psi Lodge.
AMOS HAINES FLAKE,	Medford,	117 Bayard St.
FRANK KINGSLEY GRANT,	Schoharie, N. Y.,	109 Winants Hall.
HENRY SEELEY HAMPTON,	Millville,	Chi Psi Lodge.
IRWIN WHITE HOWELL,	New Brunswick,	63 Paterson St.
EUGENE LINDSLEY HURLEY,	Rahway,	Rahway.
*WILLIAM AMBROSE KINSEY,	Newark.	
*CHARLES TOWNSEND LETSON,	Stelton.	
ROBERT BALLANTINE LITTELL,	Setauket, N. Y.,	90 Winants Hall.
GABRIEL LUDLOW,	New Brunswick,	95 Bayard St.
FRANKLIN PLEASANTS NOBLE,	Mendham,	62 Winants Hall.
WILLIAM FRANK PARKER,	New Brunswick,	164 Hamilton St.
ROBERT STEVENS PARSONS,	Paterson,	Delta U. House.
FREDERICK HARRISON PIERSON, Jr.,	Elizabeth,	Elizabeth.
WALDO BRETH ROSENCRANTZ,	Cranford,	Cranford.
CLARKSON RUNYON, JR.,	New Brunswick,	14 Union St.
THOMAS FRENCH RUSSUM,	Elizabeth,	Elizabeth.
IRVING EMMONS SALMON,	Boonton,	61 Winants Hall.
GEORGE F. SCULL, JR.,	Atlantic City,	118 Bayard St.
*FRED BENEDICT VAN BRAKLE,	Keyport.	
WILLIAM VAN BERGEN VAN DYCK,	New Brunswick,	84 College Ave.
ALEXANDER BROKAW WAY,	New Brunswick,	147 Bayard St.
CHARLES AUGUSTUS WICKERLY,	Atlantic City,	137 Winants Hall.

\* Absent on leave.

## SOPHOMORE CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
HENRY WELLS BRINK,	Katsbaan, N. Y.,	85 Hertzog Hall.
WILLARD CONGER,	New Brunswick,	83 Commercial Ave.
LANE COOPER,	New Brunswick,	106 George St.
FREDERICK WILLIAM DE HART,	Raritan,	90 Winants Hall.
ALFRED DRURY,	New Brunswick,	88 Livingston Ave.
JOHN LAWRENCE DURYEE,	Newark,	109 Winants Hall.
VIRGIL CARPENTER HAVILAND,	Saugerties, N. Y.,	22 Hertzog Hall.
GEORGE SMOCK HOBART,	Marlboro.	Chi Phi House.
ARTHUR FREDERICK JENNINGS,	Plainfield,	Plainfield
JOHN EDWARD JENNINGS,	New Brunswick,	281 Hamilton St.
CHARLES GILBERT MALLEBY,	Fishkill-on-Hudson, N. Y.,	10 Hertzog Hall.
STEPHEN MCCULLOCH,	Gloversville, N. Y.,	147 Bayard St.
EDWIN CORWIN MCKEAG,	New Brunswick,	85 Albany St.
EDWARD JAY MEEKEE,	Succasunna,	89 Hertzog Hall.
LOUIS PROVOST PEEKE,	East Millstone,	Delta U. House.
CHARLES SCUDDER POOL,	Somerville,	43 Winants Hall.
EDWARD TAYLOR RANDOLPH,	New Brunswick,	96 French St.
WILLIAM ADDISON RANNEY,	Cortland, N. Y.,	42 Gullden St.
FRANCIS EDWARD TILTON,	Holmdel,	47 Hertzog Hall.
RUSSELL VAN ARSDALE,	Paterson,	17 Hertzog Hall.
CHARLES WILLARD VOORHEES,	Middlebush,	Zeta Psi House.
JOHN BROWNLIE VOORHEES,	New Brunswick,	Highland Park.



## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JOSEPH GEORGE BAKER,	New Brunswick,	198 Neilson St.
WESLEY WARNER BURDEN,	New York City,	Delta U. House.
WILLIAM RYALL BURTIS,	Freehold,	Zeta Psi House.
CLARENCE WOODRUFF BYRAM,	Morristown,	12 Winants Hall.
WILLIAM PIERSON CARTER,	Springfield,	16 Winants Hall.
WALTER KNICKERBOCKER CAVILEER,	Lower Bank,	11 Winants Hall.
EDWIN SKELLINGER COOPER,	Asbury Park,	55 Winants Hall.
GEORGE DUNN CORNISH,	Gillette,	Chi Psi Lodge.
FREDERICK NEWTON CROWELL,	South Orange,	107 Somerset St.
PAUL KIRK DOUGLAS,	Newark,	Newark.
ISAAC NEVIUS ENYARD,	New Brunswick,	319 George St.
ERKURIES BEATTY FITHIAN,	Bridgeton,	Chi Phi House.
ALANSON McDOWELL GRAY,	Elizabeth,	Chi Psi Lodge.
ALFRED COOKMAN GREGORY,	Trenton,	Trenton.
CHRISTOPHER ARTHUR HIBLER,	Morristown,	12 Winants Hall.
SPENCER LITTLEFIELD HIGGINS,	Roselle,	87 Winants Hall.
WILLIAM ROGERS HOGG,	Toms River,	85 Albany St.
JOHN BENJAMIN HOLDING, JR.,	Bayonne City,	Bayonne City.
JOHN FINNEY HUNT,	Stockton,	80 Winants Hall.
LESTER INGLIS,	Paterson,	Chi Psi Lodge.
GEORGE ELBERT JACKSON,	Brooklyn, N. Y.,	124 Winants Hall.
STANLY WOODRUFF JONES,	Rahway,	Rahway.
WILLIAM ISAAC KEE,	Asbury Park,	140 Winants Hall.
ANDY FREDERICK KILMER,	New Brunswick,	17 Codwise Ave.
THOMAS HERBERT LETSON,	New Brunswick,	Voorhees Station.
HERBERT ARTHUR LUSTER,	Elizabeth,	Elizabeth.
FRANK CONOVER MANLEY,	New Brunswick,	12 Easton Ave.
FRANK LEAMING MANNING,	Red Bank,	20 Winants Hall.
HENRY MARELLI,	Paterson,	77 Winants Hall.
EUGENE AUGUSTUS MEACHAM,	New Brunswick,	174 Easton Ave.
BARTHOLOMEW FRANCIS MONAGHAN,	Newark,	Newark.
GEORGE SHELDON MOWER,	Katahan, N. Y.,	Fine Arts Bldg.
JAMES BRYAN NOE,	Elizabeth,	Elizabeth.
GEORGE WINFIELD NUTTMAN,	Newark,	Chi Psi Lodge.
WILLIAM O'CONNOR,	Paterson,	24 Codwise Ave.
CULLEN WARNER PARMELEE,	Ocean Grove,	117 Winants Hall.
ROBERT MATTHEWS PIERSON,	Elizabeth,	Elizabeth.
JOHN FRANCIS POST, JR.,	Riverdale,	180 Winants Hall.
CHARLES ANSON POULSON,	Mendham,	76 Winants Hall.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
IRVING LEE REED,	Atlantic Highlands,	263 Suydam St.
ALLISON BURTON ROOME,	Butler,	Delta U. House.
PAUL SCHUREMAN,	Toms River,	114 Bayard St.
WALTER TAYLOR SHEPARD,	Newark,	Newark.
WILLIAM UNGER SMALL,	Newark,	Newark.
ALFRED PRESTON THEOBALD,	New Brunswick,	339 George St.
HENRY DE WITT TREMPER,	Kingston, N. Y.,	Chi Psi Lodge.
MATHIAS EVERETT TURNER,	Rahway,	Rahway.
WILLIAM VANDERBEEK VAN BLARCOM,	Newark,	Newark.
GARRETT VAN CLEVE,	Paterson,	Chi Psi Lodge.
HOWARD EDWARD VAN NISS,	Little Falls,	17 Winants Hall.
ROBERT BRADSHAW WHITAKER,	New Brunswick,	29 Winants Hall.
HOWARD EDMUND WHITE,	Trenton,	35 Albany St.
FRANK HARRIS WHITENACK,	Mine Brook,	130 Winants Hall.
MILLER ROYAL WHITENACK,	Newark,	Newark.
JOHN ALFRED WILSON,	Dunellen,	99 Winants Hall.
GUSTAV FREDERICK WITTIG,	New Brunswick,	16 Hardenbergh St.
WILFRED ROBERTS WOODWARD,	Trenton Junction,	218 Baldwin St.
HERBERT WYCKOFF,	Freehold,	20 Winants Hall.
JESSE FREDERICK ZABRISKIE,	Cherry Hill,	87 Winants Hall.

## FRESHMAN CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
CLIFFORD PHILIP CASE,	Paterson,	Delta U. House.
WILLIAM BURTON COLLIER,	Coxsackie, N. Y.,	Zeta Psi House.
WILLIAM GURLEY COOK,	Troy, N. Y.,	Bleecker Place.
FRANK HAMILTON DOBSON,	Bayonne City,	58 Winants Hall.
RICHARD ELTINGE,	Kingston, N. Y.,	35 Hertzog Hall.
ALFRED ERICKSON,	New Brunswick,	Highland Park.
ANDREW WYCKOFF HAGEMAN,	Belleville,	39 Hertzog Hall.
CARL JOHN HEYSER,	Brooklyn, N. Y.,	Chi Psi Lodge.
FLETCHER VAN WIEE LEHMAN,	Sprakers, N. Y.,	22 Hertzog Hall.
JOHN ALBERT LIGGETT, JR.,	Rahway,	Rahway.
CHARLES MEERS MASON,	Natchez, Miss.,	Newark.
ANDREW JOHN MEYER,	Albany, N. Y.,	12 Hertzog Hall.
JOSEPH SCUDDER,	New Brunswick,	Delta Phi House.
FRANCIS AUGUSTUS SEIBERT,	Garfield,	16 Hertzog Hall.
SHUBEL KELLIE SIVER,	New Brunswick,	108 Paterson St.
ANDREW JUDSON WALTER,	Tradesville, Pa.,	12 Hertzog Hall.
JACOB VAN ZANDT WYCKOFF,	Bayonne City,	Delta U. House.

## FRESHMAN CLASS.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JAMES EDWARD ASHMEAD,	Pleasantville,	162 New St.
JAMES FRANCIS BRIODY,	Paterson,	134 Winants Hall.
GEORGE WASHINGTON BROWN,	Keyport,	105 Winants Hall.
JOHN NELSON CARPENDER, JR.,	New Brunswick,	George St.
RAYMOND VAN ARSDALE CARPENTER,	Plainfield,	Hertzog Hall.
MORRISON CROSBY COLYER,	Newark,	Chi Psi Lodge.
DAVID ABRAHAM CONOVER,	New Brunswick,	Raritan Landing.
RALPH BREWSTER CORBIN,	Metuchen,	Delta Phi House.
ALBERT BERDAN CRAFT,	Cranford,	Cranford.
GERARD JOHN DIEHL,	Passaic,	40 Hertzog Hall.
MAHLON WILLIAM ERNST,	Toms River,	35 Albany St.
GEORGE STANLEY FERGUSON,	Ocean Grove.	121 Winants Hall.
ORRIS WATSON FLAVELLE,	Bradley Beach,	121 Winants Hall.
CHARLES HENRY GOFF,	Binghamton, N. Y.,	38 College Ave.
THOMAS EZEKIEL GRAVATT,	Clarksburgh,	College Farm.
JOHN BRANDON GUTHRIE,	Englewood,	26 Winants Hall.
HUGH HADDOW, JR.,	Newark,	Newark
SAMUEL LAWRENCE HARDING,	Bridgeton,	82 Winants Hall.
GEORGE EDDY HEATH,	New Brunswick,	99 Easton Ave.
CHARLES LIPPINCOTT HOOPES,	Haddonfield,	137 Winants Hall.
WILLIAM EDWARD KELLY, JR.,	New Brunswick,	135 Welton St.
LEWIS GASTON LEARY,	Elizabeth,	Elizabeth.
SEYMOUR DE WITT LUDLUM,	Paterson,	118 Winants Hall.
DAVID HERBERT MCBRIDE, JR.,	Bridgeton,	81 Winants Hall.
ALFRED CHARLES MACDONALD,	Paterson,	Paterson.
JOHN MAHLON MILLS,	Morristown,	15 Winants Hall,
WILLIAM JAMES MORRISON, JR.,	Ridgefield Park,	106 Winants Hall.
ROGER MYERS,	Raritan,	134 Winants Hall.
GEORGE OLIVER NELSON,	Hamilton Square,	122 Bayard St.
GEORGE AUGUSTUS OSBORN,	Ocean Grove,	121 Winants Hall.
ARTHUR EDMUND OWEN,	Montclair,	110 Winants Hall.
RALPH BREWSTER PARROTT,	Schoharie, N. Y.,	Delta Phi House.
FLOYD YARD PARSONS,	Paterson,	Delta U. House.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
NORMAN LEWIS POLAND,	Malden, Mont.,	81 Winants Hall.
ROBERT BEALS FITZ RANDOLPH,	Plainfield	107 Somerset St.
HOWARD EGBERT REID,	Smithburgh,	College Farm.
ALBERT ROSE RIGGS,	Milton,	118 Winants Hall.
FREDERIC FREDERIC ROEBER,	Newark,	Newark.
WALTON BLOODGOOD SELOVER,	Rahway,	Rahway.
HERBERT AMZI SIGLER,	Montclair,	26 Winants Hall.
EDGAR DE MOTT STREYKER,	Raritan,	48 Winants Hall.
WILLIAM SUTHERLAND,	Jersey City,	58 Winants Hall.
JAMES EATON TORREY,	Montclair,	110 Winants Hall.
HENRY LUDWIG ULRICH,	Newark,	Newark.
PERCY VAN ORDEN,	Spring Valley, N. Y.,	Delta U. House.
JOHN STANLEY VERGA,	Camden,	138 Winants Hall.
CHARLES POOL VOORHEES,	Mine Brook,	Delta U. House.
GEORGE RANDOLPH WOODEN,	South Plainfield,	South Plainfield.

## SPECIAL STUDENTS.

NOT CANDIDATES FOR A DEGREE.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
FREDERICK HARVEY BLODGETT, <i>Sciences.</i>	Washington, D. C.,	361 George St.
HORACE JACKSON CRAIG, <i>Classics.</i>	Southampton, Pa.,	17 Winants Hall.
HUBERT MILLS CHESTER, <i>Chemistry.</i>	Bridgeport, Ala.,	85 College Ave.
WILSON WARREN FOWLER, <i>Sciences.</i>	New Brunswick,	359 George St.
CHARLES SEWARD JOHNSON, <i>Classics.</i>	New Brunswick,	214 Hale St.
JOSEPH AUGUSTUS JOHNSTON, <i>Classics.</i>	Westfield,	48 Hertzog Hall.
GEORGE MALVEN RIDGWAY, <i>Biology.</i>	Trenton,	Delta Phi House.
JOHN FRANCIS ROCHE, <i>Chemistry.</i>	New Brunswick,	260 Redmond St.
JOHN PROVOST STOUT, <i>Classics.</i>	Manasquan,	Chi Psi Lodge.
THOMAS MORRIS STRONG, <i>Classics.</i>	Flatbush, N. Y.,	Zeta Psi House.
CHESTER HARTEANFT TAPPING, <i>Sciences.</i>	New Brunswick,	57 Schureman St.
JAMES SCOTT THOMPSON, <i>Sciences.</i>	Morristown,	114 Bayard St.
GEORGE MOREHOUSE VAN DUZER, <i>Sciences.</i>	Warwick, N. Y.,	102 Winants Hall.
MARSHALL WILLIAMS, <i>Sciences.</i>	Blackwood,	114 Bayard St.

## SUMMARY.

	Classical.	Scientific.	Total.
Graduate Students.....	0	2	2
Seniors.....	19	14	33
Juniors.....	11	31	42
Sophomores.....	22	59	81
Freshmen.....	17	48	65
Special Students.....	6	8	14
Totals.....	75	162	237

## CLASSICAL DEPARTMENT.

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**1. ADMISSION.**

Examinations for admission to the College will be held on the Friday and Saturday preceding Commencement week, June 15th and 16th, 1894, beginning at 10 o'clock A. M. on Friday in the Registrar's office. Applicants for admission may also be examined on Tuesday, September 18th, at the same hour and place. Students are advised to be present for examination in June.

Examinations for admission are both written and oral.

Candidates for admission to advanced classes must sustain a satisfactory examination upon the subjects previously studied by the class which they propose to enter, as well as upon those required for admission into the Freshman Class. Under this regulation, students are admitted at any time during the collegiate year.

Students who desire to pursue selected branches of study may do so, if properly prepared to pursue them with the regular classes. Special provision is made for such students in the Scientific Department. All such students are required to take examinations with the class with which they study, and sufficient work must be taken to occupy fully the student's time.

It is expected that students who present themselves will be prepared, by careful study and by reviews of their

work, to pass successfully a thorough examination on the subjects which are required.

Only such students are admitted with conditions as are, in the opinion of the examiners, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class.

Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that all entrance conditions will be made up before the Thanksgiving recess.

#### ADMISSION ON CERTIFICATE.

From certain preparatory schools of approved standing students are admitted to the Freshman Class upon the full certificate of the Principal.

Upon the request of the Principal or Board of Education, the Faculty will appoint a committee to visit any school and to report upon its condition.

The schools which shall be approved by the Faculty upon the report of this committee shall be entitled, for a period of three years, to the privilege of admission upon full certificate for their students, to the Department for which they were prepared.

Blank forms of certificate for admission will be furnished to the Principal of an approved school upon application to the Registrar.

The certificate, when properly filled out, should be forwarded to the Registrar before the day fixed for the examination for admission in June of each year.



SLOAN PRIZES FOR THE BEST ENTRANCE EXAMINATIONS,  
CLASSICAL COURSE.

A FIRST PRIZE OF ONE HUNDRED DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills ; and a SECOND PRIZE OF FIFTY DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills, established in 1883 by Hon. Samuel Sloan, of New York, a member of the Board of Trustees, will be awarded to the students who shall be adjudged by the examiners to have passed the best examination among the applicants for admission to the Freshman Class, in 1894. The cash prizes will be awarded, one-half at matriculation and one-half at the end of the second term of the Freshman year. The scholarship funds will be applied to cancel term bills for tuition during the course, and will be forfeited if the student's general average on the work of the year falls below 80 on a scale of 100.

## REQUIREMENTS FOR ADMISSION.

The following, or a full equivalent, are the requirements for admission to the Freshman Class:

## 1. LATIN.

Allen and Greenough's, or Andrews and Stoddard's, or Gildersleeve's, or Harkness' Latin Grammar, including the principles of Prosody.

Jones' Latin Composition, or the first forty-four sections of Arnold's Latin Prose Composition, or an equivalent.

Cæsar, four Books of the Gallic War.

Sallust, Catiline.

Vergil, Æneid, six Books.

Cicero, seven orations, of which it is recommended that the orations for the Poet Archias, on the Manilian Law, and for Marcellus, shall be three.

The Fifth Book of Cæsar's Gallic War may be substituted for Cicero's oration for Marcellus.

Questions on the subject-matter, the history, the geography and the mythology involved in the Latin read *Students will be tested in reading "at sight" easy Latin (e. g., Cæsar, Sallust, Cicero, Quintus Curtius); and a map of Italy, to be drawn from memory, at the examination, will be required, together with familiarity with the classical geography of Gaul and Spain; and Allen's History of the Roman People (or an equivalent history of this period) to the time of the Empire.*

In preparing in Latin, the student should give close attention to the regular prose constructions of the language, and especially, in reading Cæsar or Sallust, to the forms of "indirect discourse." He should be thoroughly drilled in the use and the force of the moods and tenses, the consecution of tenses, the gerundive construction, etc., and should be taught to *analyze the sentence into subject and predicate, and the words, phrases or clauses which modify the subject and the predicate.* There should be frequent "Anticipatory Parsing."

The student should have as much exercise in writing Latin as possible. From the first, exercises in rendering English into Latin, both orally and in writing, are earnestly recommended.

The system of pronunciation followed is the Roman. For correctness of pronunciation, the rules of quantity are necessary to those who have not been thoroughly accustomed to the correct sound of the Latin words.

## 2. GREEK.

Greek Grammar entire; Goodwin's, or Hadley and Allen's.

Xenophon's *Anabasis*, three books.

Homer's *Iliad*, three books (omitting the catalogue of the ships). Particular care should be given to scansion.

Sight-reading. Students will be tested in reading easy Greek prose not included in the above.

Prose Composition, Jones', or Collar and Daniell's, or Woodruff's.

Greek History and Geography, Smith's *Smaller History of Greece*, or an equivalent, and a sufficient knowledge of Ancient Geography to enable the student to locate correctly the more important cities of Greece and the Asiatic coast, and to draw a general outline of the coast, placing the chief islands of the *Ægean Sea*.

The above statements indicate the amount of work presupposed by the entrance examinations, but results are more important than the pages covered, and a free substitution of equivalents is allowed.

In preparing for the Greek course too much prominence cannot be given to a careful drill in composition. In no other way can the Grammar be so easily mastered, particularly the laws of accent.

In pronunciation the accent must be followed in prose, while preserving the correct quantities; but in poetry regard will be had only to quantity.

## 3. MATHEMATICS.

Arithmetic complete, including the Metric System.

Fundamental operations; Common and Decimal Fractions; Percentage; Proportion; Square and Cube Root.

A practical knowledge of the Metric System of Weights and Measures is indispensable, since it is used in the class-room.

Algebra, through Quadratic Equations, including Radicals; or the first fifteen chapters of Bowser's *College Algebra*, or an equivalent.

Attention is especially called to the *essential importance of a thorough preparation in the elements of Algebra* on which subsequent success in Mathematics depends. The student should be thoroughly drilled in the fundamental operations of addition, subtraction, multiplication and division, in the use of negative and fractional exponents, in factoring and in involution and in evolution. He should be able to solve readily simple and quadratic equations. It is earnestly recommended that the student be required to solve numerous and varied examples, and to explain them verbally, with clearness, *giving the reasons for the successive steps*. It is desirable also to cultivate habits of neatness and order in the presentation of work on the black-board or paper.

Plane Geometry, four books of Bowser's, or an equivalent, *including Exercises*. Careful attention should be given to the *Exercises* in Geometry, as they greatly aid in acquiring readiness in geometrical reasoning.

#### 4. THE ENGLISH BRANCHES.

History of the United States (Johnston's History of the United States).

Candidates for admission are examined in the History of the United States, with special reference to the colonization of the several States, the forms of government which existed previous to the War for Independence, the causes and principal events of that war, the period of the Confederation, the establishment of the Federal Constitution, with the general history subsequent to that event.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

Geography.

English Grammar.

Spelling.

A short English Essay is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1894, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Shakespeare's *Julius Caesar* and *Merchant of Venice*; Scott's *Lady of the Lake*; Longfellow's *Courtship of Miles Standish*; Scott's *Ivanhoe*; Kingsley's *Westward Ho!*

In 1895, students should be familiar with Shakespeare's *Macbeth* and *Twelfth Night*; Milton's *L'Allegro* and *Il Penseroso*; Addison's *Sir Roger de Coverley Papers*; Macaulay's *Essays on Milton* and *Addison*; Irving's *Sketch Book*; Longfellow's *Evangeline*; Scott's *The Abbot*.

#### 5. MODERN LANGUAGES.

German.—As good a knowledge of the grammar as is implied in the study of Whitney's Brief German Grammar, or Joyner-Meissner's German Grammar for Schools and Colleges, ability to pronounce correctly, and acquaintance with the commoner strong verbs.

## 2. COURSE OF INSTRUCTION.

The Course of Instruction occupies four years, with three terms in each year.

The following is a scheme of the studies of the course. While it is subject to change in details, it exhibits the amount of work required of students during the four years, and indicates to candidates for advanced standing the equivalents which will be accepted from them. All the studies of the Freshman and Sophomore years are prescribed, and are intended to be of such a character as will furnish the sound basis of a liberal education, whatever profession or career is subsequently chosen. During the Junior and Senior years, certain subjects are prescribed for all candidates for a degree, while other subjects are arranged in elective courses.

The arrangement of these courses is a result of a recent careful revision of the curriculum, and is designed not only to carry further the general training of the student in the liberal arts, but also to promote his purpose to fit himself for the special occupation or profession which he may afterward follow.

The student makes his choice at the end of the Sophomore year, and the course then chosen is to be pursued in connection with the prescribed studies throughout the last two years.

## FRESHMAN CLASS.

*Exercises during each term of the year in Composition, Declamation and Extempore Speaking. Bible-Class (optional) and Sermon, Sunday morning.*

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. LATIN.—Cicero, De Amicitia; Oral and Written Composition.....	4
2. GREEK.—Homer's Odyssey; Prose Composition.....	4
3. MATHEMATICS.—Bowser's Algebra, from Chapter XVII.....	4
4. ENGLISH LITERATURE.—History of the English Language; Lectures; Pancoast's Representative English Literature.....	2
5. PHYSIOLOGY.—Comparative Biology; Lectures; Physiology, Martin...	1
6. CIVICS.....	1

## SECOND TERM, THIRTEEN WEEKS.

1. LATIN.—Livy; Horace, Odes; Composition; Latin Synonyms.....	5
2. GREEK.—Selections from Herodotus and Xenophon; Prose Composition.....	5
3. MATHEMATICS.—Bowser's Algebra, completed; Bowser's Geometry.....	3
4. RHETORIC.—Clark; Lectures; Essays.....	2
5. ZOOLOGY.—Comparative Anatomy; Lectures; Physiology, Martin.....	1

## THIRD TERM, TEN WEEKS.

1. LATIN.—Horace; Odes, Epodes, Ars Poetica.....	4
2. GREEK.—Lysias; Prose Composition.....	4
3. MATHEMATICS.—Bowser's Geometry, completed.....	4
4. BOTANY.—Gray.....	2
5. ENGLISH LITERATURE.—History of English Literature; Pancoast's Representative English Literature.....	2

SOPHOMORE CLASS.

*Exercises throughout the year in Composition, Declamation and Extempore Speaking. Bible-Class (optional) and Sermon, Sunday morning.*

FIRST TERM.

Hours a week.

1. LATIN.—Pliny's Letters; Tacitus, Agricola.....	3
2. GREEK.—Selections from Plato; Prose Composition.....	3
3. INORGANIC CHEMISTRY.—Lectures, with Experiments, Ramsen.....	4
4. MATHEMATICS.—Bowser's Plane and Spherical Trigonometry.....	3
5. GERMAN.—Whitney's Brief German Grammar and Grimm's Märchen..	3

SECOND TERM.

1. LATIN.—Tacitus, Selections from Annales and Historiae.....	3
2. GREEK.—Demosthenes on the Crown; Æschines against Ctesiphon; Prose Composition.....	3
3. MATHEMATICS.—Bowser's Analytic Geometry.....	3
4. HISTORY.—Myers .....	4
5. GERMAN.—Grimm's Märchen and Schiller's Wilhelm Tell.....	3

THIRD TERM.

1. LATIN.—Terence or Plautus; Catullus.....	3
2. GREEK.—Aristophanes' Birds or Clouds; Prose Composition.....	3
3. MATHEMATICS.—Bowser's Analytic Geometry.....	3
4. HISTORY.—Myers.....	4
5. GERMAN.—Schiller's Wilhelm Tell and Goethe's Hermann and Dorothea .....	3

## JUNIOR CLASS.

*Exercises throughout the year in Composition, Original Declamation and Extempore Speaking. Bible-Class (optional) and Sermon, Sunday morning.*

## PRESCRIBED STUDIES.

	FIRST TERM.	Hours a week.
1. FRENCH.—Whitney's Brief French Grammar; Mérimée's Colomba.....	3	3
2. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Science; Schwegler's History of Philosophy, Stirling's Ed.; Essays on Metaphysical Subjects.....	5	5
3. PHYSICS.—Ganot; Lectures.....	2	2
SECOND TERM.		
1. FRENCH.—Mérimée's Colomba; Hugo's Hernani.....	3	3
2. LOGIC.—Fowler's Logic.....	2	2
3. PHYSICS.—Ganot; Lectures.....	2	2
4. ASTRONOMY.—Young's Elements.....	3	3
THIRD TERM.		
1. FRENCH.—Hugo's Hernani and Corneille's Cid.....	3	3
2. PHYSICS.—Ganot; Lectures.....	2	2
3. HISTORY OF CIVILIZATION.—Guizot; Essays.....	5	5

## SENIOR CLASS.

*Exercises throughout the year in Composition, Original Declamation and Extempore Speaking. Bible-Class (optional) and Sermon, Sunday morning.*

## PRESCRIBED STUDIES.

	FIRST TERM.	
1. POLITICAL ECONOMY.—Walker and Perry; Lectures; Essay.....	4	
2. GEOLOGY.—Geikie.....	3	
3. FINE ARTS.—Lectures.....	1	
SECOND TERM.		
1. CONSTITUTIONAL LAW.—Cooley; Lectures; Essays.....	4	
2. ETHICS.—English Bible; Evidences of Christianity.....	3	
3. FINE ARTS.—Lectures.....	1	
THIRD TERM.		
1. INTERNATIONAL LAW.—Lectures.....	4	
2. PRACTICAL ETHICS.....	2	
3. MINERALOGY.....	2	
4. PEDAGOGY.—Lectures.....	1	



## JUNIOR AND SENIOR CLASSES.

### ELECTIVE STUDIES.

The choice of an Elective Course, two subjects, is made at the end of the Sophomore year, and these subjects are pursued throughout the Junior and Senior years in addition to the prescribed schedule of studies.

#### I. COURSES OF ELECTIVE STUDIES.

1. Course in Ancient Languages—Latin and Greek.
2. Course in Modern Languages—English, French and German.
3. Course in Mathematics and Science.
4. Course in History and Philosophy.

The recitation schedule will be so arranged that students may elect, instead of one of the above courses, any one of the following :

#### II. GROUPS OF ELECTIVE STUDIES.

- |                              |                                     |
|------------------------------|-------------------------------------|
| 1. Latin and English-French. | 10. English-French and Mathematics. |
| 2. Latin and Mathematics.    | 11. English-French and History.     |
| 3. Latin and Science.        | 12. German and Mathematics.         |
| 4. Latin and History.        | 13. German and Science.             |
| 5. Latin and Philosophy.     | 14. German and History.             |
| 6. Greek and English-French. | 15. German and Philosophy.          |
| 7. Greek and German.         | 16. Mathematics and Philosophy.     |
| 8. Greek and Science.        | 17. Science and History.            |
| 9. Greek and Philosophy.     | 18. Two Natural Sciences.           |

Students choosing the Course in Mathematics and Science may still further elect to pursue Biology (including Zoology, Botany and Entomology) throughout the Junior and Senior years, and Chemistry during the Junior year, with Physics, or with Geology and Mineralogy, during the Senior year.

Students electing the Course in Modern Languages will pursue German throughout the Junior and Senior years, English throughout the Junior year, and French throughout the Senior year.

## JUNIOR CLASS.

## ELECTIVE STUDIES.

1. *Course in Ancient Languages—Latin and Greek throughout the year.*

## FIRST TERM.

Hours a week.

- |  |   |
|--|---|
| 1. LATIN.—Roman Oratory; Selections from the Rhetorical Essays of Cicero, and from Quintilian..... | 3 |
| 2. GREEK.—Attic Orators, Selected Orations.....  | 3 |

## SECOND TERM.

- |  |   |
|--|---|
| 1. LATIN.—Roman Philosophy; Selections from the Philosophical Essays of Cicero, and from Seneca and Lucretius..... | 3 |
| 2. GREEK.—Thucydides .....   | 3 |

## THIRD TERM.

- |   |   |
|---|---|
| 1. LATIN.—Roman Law; Antejustinianian text; Bruns, <i>Fontes Iuris Romani</i> ; Huschke, <i>Iurisprudentiæ Antetustinianæ Quæ Supersunt</i> ; Historical Development of the System..... | 3 |
| 2. GREEK.—Selections from the Lyric Poets.....  | 3 |

## SENIOR CLASS.

## ELECTIVE STUDIES.

1. *Course in Ancient Languages—Latin and Greek throughout the year.*

## FIRST TERM.

- |   |   |
|---|---|
| 1. LATIN.—Roman Law under the Justinianian Redaction; The Institutes of Justinian, edited as a Recension of the Institutes of Gaius by T. E. Holland; Outlines of Roman Law, Morey..... | 4 |
| 2. GREEK.—Sophocles and Æschylus or Euripides.....  | 4 |

## SECOND TERM.

- |   |   |
|---|---|
| 1. LATIN.—Roman Law; The Digest; Introduction to Justinian's Digest, Roby; Selected Titles, Holland and Shadwell; Christian Latin; Latin Fathers and Hymns..... | 4 |
| 2. GREEK.—Plato's Republic; Aristotle's Metaphysics.....  | 4 |

## THIRD TERM.

- |  |   |
|--|---|
| 1. LATIN.—Roman Topography and Archaeology; Shumway's "A Day in Ancient Rome;" Illustrated Lectures..... | 4 |
| 2. GREEK.—Lucian .....   | 4 |

JUNIOR CLASS.

ELECTIVE STUDIES.

2. *Course in Modern Languages—English and German throughout the year.*

FIRST TERM.

Hours a week.

- |  |   |
|--|---|
| 1. ENGLISH.—Poetics; Milton.....   | 3 |
| 2. GERMAN.—Wilhelm Tell, or another play of Schiller; German Prose Composition and Conversational German throughout the Junior and Senior years..... | 3 |

SECOND TERM.

- |  |   |
|--|---|
| 1. ENGLISH.—The English Drama; Shakespeare.....          | 3 |
| 2. GERMAN.—Faust, Part I, or another play of Goethe..... | 3 |

THIRD TERM.

- |  |   |
|--|---|
| 1. ENGLISH.—Sweet's Anglo-Saxon Primer; Chaucer.....           | 3 |
| 2. GERMAN.—Minna von Barnhelm, or another play of Lessing..... | 3 |

SENIOR CLASS.

ELECTIVE STUDIES.

2. *Course in Modern Languages—French and German throughout the year.*

FIRST TERM.

- |  |   |
|--|---|
| 1. FRENCH.—The works of Molière; Lectures on Molière and the period of French Literature contemporary with him; private reading of French authors; French composition..... | 4 |
| 2. GERMAN.—German Literature. Scherer, with lectures. The classroom work will be conducted entirely in German during the Senior year.....                                  | 4 |

SECOND TERM.

- |   |   |
|---|---|
| 1. FRENCH.—The works of Victor Hugo; lectures on Hugo and the French literature of the Nineteenth Century; private reading; French Composition..... | 4 |
| 2. GERMAN.—Middle High German; Grammar; The Niebelungen Lied.....   | 4 |

THIRD TERM.

- |  |   |
|--|---|
| 1. FRENCH.—The work of the second term continued.....  | 4 |
| 2. GERMAN.—Sight Reading of the German Lyric Poetry, with German Essays in literary criticism..... | 4 |

## JUNIOR CLASS.

## ELECTIVE STUDIES.

3. *Course in Mathematics and Science—Mathematics and Chemistry, or Mathematics and Biology, or Chemistry and Biology, throughout the year.*

## FIRST TERM.

Hours a week.

- |   |   |
|---|---|
| 1. MATHEMATICS—Differential and Integral Calculus, Bowser.....            | 3 |
| 2. SCIENCE.—a. Chemistry.—Experimental Chemistry; Blowpipe Analysis ..... | 3 |
| b. General Biology.....   | 3 |

## SECOND TERM.

- |  |   |
|--|---|
| 1. MATHEMATICS—Differential and Integral Calculus, Bowser..... | 3 |
| 2. SCIENCE.—a. Chemistry.—Qualitative Analysis.....            | 3 |
| b. Invertebrate Zoology; Vegetable Histology.....              | 3 |

## THIRD TERM.

- |   |   |
|---|---|
| 1. MATHEMATICS.—Method of Least Squares; Introduction to Mathematical Astronomy.....  | 3 |
| 2. SCIENCE.—a. Chemistry.—Qualitative Analysis, completed; Quantitative Analysis..... | 3 |
| b. Botany and Entomology.....   | 3 |

## SENIOR CLASS.

## ELECTIVE STUDIES.

3. *Course in Mathematics and Science—Mathematics and Physics, or Mathematics and Biology, or Biology and Physics, or Biology and Geology and Mineralogy, or Mathematics, Geology and Mineralogy, throughout the year.*

## FIRST TERM.

- |   |   |
|---|---|
| 1. MATHEMATICS—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures..... | 4 |
| 2. SCIENCE.—a. Physics.—Mechanics; Light; Laboratory Practice.....                      | 4 |
| b. Geology and Mineralogy.....  | 4 |
| c. Systematic Entomology; Vertebrate Anatomy.....                                       | 4 |

## SECOND TERM.

- |   |   |
|---|---|
| 1. MATHEMATICS—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures..... | 4 |
| 2. SCIENCE.—a. Physics.—Heat; Electricity; Laboratory Practice.....                     | 4 |
| b. Geology and Mineralogy.....  | 4 |
| c. Vegetable Physiology; Mammalian Anatomy and Histology.....                           | 4 |

## THIRD TERM.

- |   |   |
|---|---|
| 1. MATHEMATICS—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures..... | 4 |
| 2. SCIENCE.—a. Physics.—Electricity; Sound; Laboratory Practice.....                    | 4 |
| b. Geology and Mineralogy.....  | 4 |
| c. Botany and Entomology.....   | 4 |

JUNIOR CLASS.

ELECTIVE STUDIES.

*4. Course in History and Philosophy.*

FIRST TERM.

Hours a week.

- |   |   |
|---|---|
| 1. HISTORY.—The Periods of the Renaissance and the Reformation..... | 3 |
| 2. MORAL PHILOSOPHY.—Butler's Analogy .....                         | 3 |

SECOND TERM.

- |  |   |
|--|---|
| 1. HISTORY.—The Periods of the Renaissance and the Reformation, continued. ....                                      | 3 |
| 2. MENTAL PHILOSOPHY.—Schwegler's History of Philosophy, Stirling's Ed.; Mansel's Metaphysics; Lectures; Theses..... | 3 |

THIRD TERM.

- |   |   |
|---|---|
| 1. HISTORY.—English Constitutional History.....   | 3 |
| 2. MENTAL PHILOSOPHY.—Sir William Hamilton's Metaphysics; Windelband's History of Philosophy; Lectures; Theses..... | 3 |

SENIOR CLASS.

ELECTIVE STUDIES.

*4. Course in History and Philosophy.*

FIRST TERM.

- |  |   |
|--|---|
| 1. HISTORY.—Critical Study of American History; Reports upon current Historical and Economic Literature..... | 4 |
| 2. MORAL PHILOSOPHY.....   | 4 |

SECOND TERM.

- |  |   |
|--|---|
| 1. HISTORY.—Critical Study of American History, continued; Comparative Study of Modern Constitutions; Reports upon current Historical and Economic Literature..... | 4 |
| 2. MORAL PHILOSOPHY.....   | 4 |

THIRD TERM.

- |   |   |
|---|---|
| 1. HISTORY.—Comparative Study of Modern Constitutions; Reports upon current Historical and Economic Literature..... | 4 |
| 2. MENTAL PHILOSOPHY.....   | 4 |

## LATIN.

In the early part of the course in the Latin Language and Literature, the student is aided in mastering the language of the chief writers of the late Republic and early Empire.

At first, the significance of particular words is sought by inspection of their derivation and by comparison with their actual synonyms, and the sentence is studied analytically, regarding the value and disposition of clauses and phrases. Auxiliary to both of these aims, composition, based on the text which is being read, is practiced in set written and oral exercises; and Latin questions, with extemporaneous answers in Latin, following an inductive colloquial method, are employed according to the progress of the student.

The attention of the student is directed to the differences in syntax and diction of the various periods and authors, and as his familiarity with the language increases, he is led to examine critically the author's literary characteristics. As leading writers of the Republic and early Empire, the Minor Course includes Plautus or Terence, Cicero, Catullus, Livy, Horace, Tacitus and Pliny the Younger.

## ELECTIVE LATIN.

COURSE IN ROMAN PHILOSOPHY.—The text read sets forth Roman views respecting the Divine Being, Providence, the immortality of the soul, "the higher law" of ethics, etc. An especial purpose is to exhibit the theology and ethics of the Stoic philosophy, "for three hundred years the healthiest and best influence in Roman society,"

and to prepare for the intelligent appreciation of its influence upon Roman legislation.

**COURSE IN ROMAN LAW.**—At first, antejustinianian text is read, with a rapid review of the historical development of the law from the Twelve Tables to Justinian, touching upon the changes produced by Prætor and Jurisconsult, and the influence of Stoicism and Christianity. Later, Justinian's Redaction is studied, with reading of the Institutes and excerpts—with at least one full title—from the Digest. The chief object here is not to re-arrange the subject-matter into a code, but to catch the Roman Jurist's way of looking at legal questions, by following the order of the Institutes, supplementing that elementary work by citation of the larger works.

A course of illustrated lectures on Roman Topography and Archæology is given, treating such subjects as the Public and Private Buildings of Rome and Pompeii, the Art and Life of the Romans.

Other subjects of study may be: Roman Oratory, with the reading of Quintilian and Cicero; Christian Latin, with reading from Tertullian, Lactantius, Augustine and Latin Hymns.

#### GREEK.

The Greek course is divided into two parts, the division being at the end of the Sophomore year. The first is prescribed for the entire Classical Section; the second is one of the electives.

The required course aims to introduce the student to some of the best work of the greatest writers. It is suffi-

cient in quantity to enable him to master the grammatical structure of the language. This, with the acquirement of a good vocabulary, is the end held first of all in view. All should, in addition, be able to appreciate to some degree the strength and beauty of the Greek Literature.

The course begins with the study of Homer as a continuation of the work done in the preparatory school. After the first term the attention is directed chiefly to the Attic prose of the fifth and fourth centuries before Christ. While the particular books read vary somewhat from year to year, there will not be much variation in the authors chosen, which are the following: Homer, Herodotus, Xenophon, Plato, Lysias, Demosthenes, Æschines and Aristophanes. Exercises in writing Greek are constantly required during these two years, such as are drawn in part from special text-books, and in part based on the texts read.

During this course promising students are encouraged to read privately in addition to the work assigned to the class, and are examined thereon, credit being duly given in the annual catalogue.

The elective course running through the Junior and Senior years is divided according to the number of terms into six studies, in each of which a separate field of literature is chosen. In each term the plan contemplates three features—first, lectures by the instructor; second, readings assigned to the class for regular recitation, and third, some individual task assigned to each one following the course for private study, on which he will be expected to report in the form of a thesis or paper before the end of each term, and will be examined.



I. The Attic Orators. Orations by various authors will be studied and analyzed, as well as the development of the literary type. Some one orator will be chosen as the centre of study. The individual work will consist in part of abstracts and analyses of orations not read in class.

II. The Historians. At least one complete book of Thucydides will be read in class, and also some portions of Herodotus. The individual work will require readings and studies in the later historians as well.

III. The Lyric Poets. Besides readings from a number of poets, a careful study of the metrical form will be required, both for the proper appreciation of the lyrics themselves and to prepare the way for the easy understanding of the dramatic choruses. Metrical translations will be required from time to time.

IV. The Dramatists. At least two complete plays, one of Sophocles and one of Æschylus or Euripides are read in class, and each member of the class will read privately at least one other. Some of the choral passages will be memorized.

V. The Philosophers. The class readings will be taken from Plato and Aristotle, and will be varied from year to year.

VI. The last term will be given to Lucian.

The elective course is not designed to make specialists, but to fit a man to specialize profitably if he so desires, and, in any case, to give the student an insight into all the great types of the Greek literature, and to enable him to gain some knowledge of the civil history and inner life of the people, and some conception of the influence of Greece on human thought and culture.

## MODERN LANGUAGES.

**ENGLISH LANGUAGE AND LITERATURE.**—The course in English embraces, with the elective study of Anglo-Saxon, the required study of the history of the English language and its literature, and the critical reading of English classics. A course of private reading is prescribed, upon which examinations are held. Essays in literary criticism are required during the Sophomore year. The elective study of the language and literature is pursued during the Junior year.

**GERMAN.**—German is taught three hours a week throughout the Sophomore year as a required subject. During the first term, the grammar is the main object of study, with constant practice in the translation of illustrative sentences, both from German into English and from English into German. At the same time the student is required to learn, day by day, short vocabularies of commonly-used words, for conversational drill in the classroom. In the second term easy German prose is read, both in set lessons and at sight, and in the third, selections from standard authors for careful translation and for literary analysis. It is the aim of the required course in German to give all the students a competent knowledge of the grammar, and a sufficiently large vocabulary to be able to read ordinary prose with ease, and to pursue further study by themselves without difficulty.

In the Junior and Senior years German is made one of the eight elective subjects, three hours a week throughout the Junior and four hours throughout the

Senior year. The students who choose this subject are taught not only the reading knowledge of modern German, but are drilled in connected conversation and in the study of the older periods of the language from German text-books, the instruction throughout the Senior year being given entirely in the German language.

**FRENCH.**—French is taught three hours a week throughout the Junior year as a required study. A careful phonetic analysis of the pronunciation is insisted on, and the syntax is taught historically, presupposing a thorough acquaintance with the Latin grammar. In the second term a large amount of easy prose is read, with constant practice in translation both from French into English and from English into French. In the third term the harder authors are selected and the literary form is studied as well as the language itself. The required course is intended to give to all a practical acquaintance with the language, wide enough to enable them to read ordinary French prose at sight.

In the Senior year French forms a part of one of the elective courses, being taught four hours a week to such as choose to pursue it. The aim of the course is to make the student acquainted with some of the best products of French literature during the seventeenth and nineteenth centuries.

#### MATHEMATICS AND ASTRONOMY.

**MATHEMATICS.**—Algebra and Geometry are required during the Freshman year. The course in Algebra intro-

duces the student to the more abstract portions of the subject: Series, Mathematical Induction, the Method of Indeterminate Coefficients, the Binomial Theorem and the Theory of Equations. At the same time, practical training is given in the use of logarithms, and in the solution of higher numerical equations.

In Geometry, the student is required not only to demonstrate theorems relating to the measurement of the circle, plane and solid angles and the solids of Geometry, but also to show how to apply them in original and practical problems to the mensuration of surfaces and solids.

Trigonometry and Analytic Geometry are taught during the Sophomore year, completing the required course in Mathematics. The Trigonometry studied includes trigonometric analysis and the solution of triangles, with applications to surveying and navigation. The course in Analytic Geometry treats of the representation of curves by means of equations. The properties of the line, circle and conic sections are studied by the use of Algebraic Analysis. This subject presents considerable difficulty to students not well grounded in Algebra, Geometry and Trigonometry.

Mathematics may be chosen as an elective study four hours a week throughout the Junior and Senior years. Among the subjects offered in this course are the following:

- Higher Algebra. Determinants.
- Theory of Equations.
- Analytic Geometry of Three Dimensions.
- Differential and Integral Calculus.
- Differential Equations.
- Analytic Mechanics.

**ASTRONOMY.**—General Astronomy is taught during the second term to all the members of the Junior Class. The daily recitations are supplemented by lectures on the new astronomy and modern methods and instruments of astronomical research. These lectures are illustrated by photographic lantern views obtained from the leading observatories of the world. Mathematical and Practical Astronomy may be pursued as an elective study in combination with Mathematics throughout the Junior and Senior years. The course then includes:

Introduction to Mathematical Astronomy.  
Theory and Use of Instruments.  
Method of Least Squares.  
Practical Work in the Observatory.

The theoretical instruction is accompanied by practical work in the Schanck observatory.

This course is designed to give the student training in the theory and use of instruments of precision, and to enable him from his own observations of the heavenly bodies to solve various important problems in the applications of Astronomy: the Determination of Time, Longitude, Latitude, Direction of the Meridian, etc. Considerable attention is paid to methods of calculation and to the reduction of observations.

#### CHEMISTRY.

**INORGANIC CHEMISTRY** is taught from a text-book, and fully illustrated by lectures which demonstrate experimentally the points made in the book. The course covers the first term of Sophomore year, with exercises four hours

each week. The intention is to give each student such a general knowledge of the science as every educated man should possess. Provision is made in an elective course for those who wish to pursue the subject further.

**ELECTIVE CHEMISTRY.**—In the Junior and Senior years, students may elect a course in Analytical Chemistry with Laboratory Practice and Lectures. The experimental studies in this department have proved both attractive and profitable to those intending to devote themselves to Law or Medicine, or to business pursuits, as well as to men who intend to teach or to pursue lines of work immediately connected with chemistry and its applications.

The pupil begins by making the experiments in Remsen's Chemistry, thus acquiring by actual experience a familiarity with chemical substances and chemical phenomena.

The study of Qualitative Analysis is next taken up. The student makes the tests, studies the reactions, and proceeds rapidly from the analysis of simple substances to more complex. The method here followed of keeping notes of every step affords the student valuable practice in the three divisions of experimental science—Experiment, Observation and Inference. The theory of analysis is explained in the lectures and recitations on the subject. In connection with this subject, Blowpipe Analysis is also taught.

Students able to finish the foregoing before the end of the College year, proceed to Quantitative Analysis. The instruction in this subject is not so much on detail as on general principles and construction and use of apparatus. Typical salts of known composition are analyzed gravi-

metrically and volumetrically, and then substances requiring for their determination carefully constructed apparatus.

#### MINERALOGY AND GEOLOGY.

A course of lectures in Mineralogy is given to the Senior Class, in which free use is made of the valuable mineral collections of the College, and of the private collection of the Professor in charge, which has been deposited in Geological Hall, by means of which the characteristics of the most important mineral species are illustrated and explained.

In the study of Geology a text-book is used, but each lesson is explained in advance by a short lecture, at which time suitable specimens are exhibited.

#### PHYSICS.

This subject is taught by lectures, and copious additions are made to the matter of the text-book. Each point is demonstrated as far as possible; and the relations of the subject to ordinary natural phenomena, the processes of the industrial arts, etc., are pointed out. Students are encouraged to use the apparatus under the direction of the Professor in charge, and are trained to distinguish the essential from the casual conditions of experiments, as well as to infer from scientific data no more than is certain and warranted. The course begins with Mechanics and proceeds to Heat, Electricity, Sound and Light.

The apparatus is well fitted to illustrate all principles, and such additions are made to it as the industrial applications of science demand.

**ELECTIVE PHYSICS.**—During the Senior year of the Classical Course, Physics is an elective study.

The object of this elective is to furnish a sound, practical foundation to those who expect to engage in industrial pursuits, or in professions which demand acquaintance with the principles of Physics. The work consists of a course of laboratory exercises such as is set forth in Stewart and Gee's Practical Physics, besides many of the experiments described in the text-book used in the lecture course. The facilities of the Physical Laboratory have been greatly increased, so that all essentials are available to students.

#### **BIOLOGY.**

**PHYSIOLOGY AND ZOOLOGY.**—Required one hour a week, during the first two terms of the Freshman year. The method of instruction is by lectures and quizzes, supplemented by demonstrations from charts, specimens, dissections, and Auzoux models. The aim is to give the student a bird's-eye view of the principles of Physiology, the structure of animals, and such an acquaintance with the facts of Zoology as shall enable him later to pursue psychological and geological studies with increased profit.

**GENERAL BIOLOGY.**—Elective in the Junior and Senior years. The distinctive studies of the Course in Biology of the Scientific School must be chosen; the detailed account of such studies is given in its proper place. The time required is three morning hours and two afternoons in the Junior year, and four morning hours and two afternoons in the Senior year. One-half of this time during the first two



terms of each year will be pursued with the Professor of Biology. A detailed account of the studies of this portion of the course is given under the sub-head of General Biology for the Scientific School. The remaining time for the Biological Elective is divided between the Professors of Botany and of Entomology. The election of Biology includes Zoology, Botany and Entomology—the complete course extending through two years. It is possible for either Juniors or Seniors to take the work of only the first year, yet such a choice, giving but a fragment of these subjects, is not recommended.

#### BOTANY.

Students in all courses take Botany two hours a week in the Spring term of the Freshman year. Gray's "Revised Lessons" is used as the text-book in descriptive Botany, and in connection with this, the students familiarize themselves with the methods of plant analysis. Each point considered is, as far as possible, illustrated by living specimens, either grown in the laboratory for purposes of dissection or collected in the fields and forests. Students are taught the methods of preparing and mounting specimens as abundantly seen in the College Herbarium.

The work of the Junior and Senior years, required in the Courses in Agriculture and Biology, is open for election by the students of the corresponding years in all the classical courses.

#### HISTORY AND POLITICAL SCIENCE.

The study of History in the Classical Department is begun in the second term of Sophomore year with the use

of a text-book as a guide. The course is planned to cover European history, in outline, from the beginning of the Empire to the outbreak of the French Revolution. The progress of the greater movements in political and social development is traced, and emphasis is laid upon the formation and growth of modern States. In this required part of the course the method of instruction is to some extent topical, and aims to furnish information essential to good citizenship, to cultivate a habit of investigation, and to teach the student how to come to independent conclusions. Students are encouraged to use the library, are given direction in methods of historical work, and are taught the value of historical sources. A constant use of the historical atlas is required of the student throughout the prescribed courses.

For students in the Scientific Department, a corresponding course in general European history is given in the first and second terms of the Junior year. In the third term, Guizot's *History of Civilization in Europe* is used as a text-book by both sections of the class.

The lectures before the class and the subjects assigned for essays are intended to stimulate a desire to understand the ideas which underlie the causes of events, and which give to history its continuity and unity.

**ELECTIVE HISTORY.**—Elective courses are open to Juniors and Seniors, offering facilities for advanced and systematic work in special periods of history, and for a study of the origin and development of political institutions. The courses include both European and American history.

The method of study is by lectures and topics. It aims to cultivate a spirit of original research and places emphasis upon library investigations. For students of the Senior Class a Seminary of History and Political Science is organized, in which papers embracing the results of independent original study are reported.

The following is an outline of the proposed elective courses :

**JUNIOR YEAR.**

**I. The Periods of the Renaissance and the Reformation.**

The work will consist chiefly of library investigations and critical examinations of reports growing out of these studies. The class will meet three times each week during the first and second terms.

**II. English Constitutional History.**

Instruction will be given by text-books, lectures and required readings on assigned topics. This is taken as an introduction to American History. Three times each week during the third term.

**SENIOR YEAR.**

**III. Colonial History of America, followed by the Constitutional and Political History of the United States.**

The methods of instruction are in general the same as in the Junior year. It is designed to be a critical study of American history. Attention is especially given to the growth of nationality and to the development of the Constitution. Three hours each week during the first and second terms.

**IV. Comparative Study of the Modern Constitutions.**

In this course the Constitutions of modern European States are studied and compared with that of the United

States. A part of the second and the third term, three hours each week.

**V. Seminary of History and Political Science.**

This is designed for original investigations, and for reports upon the current historical and economic literature. One hour each week throughout the year.

**POLITICAL ECONOMY.**—The Senior Class, in both the Classical and Scientific Departments, receives instruction in the principles of Political Economy four hours weekly during the first term. In addition to the use of a text-book, lectures, formal and informal, are given, discussions are held, special topics are assigned to individuals for careful study, the results of which are read before the class, and essays are prepared by the class on some subject chosen from a number relating to this science.

**CONSTITUTIONAL LAW.**—The Senior Class in both departments pursues the study of Constitutional Law four hours weekly during the Winter term. Cooley's Principles of Constitutional Law is used as a text-book. Lectures are read by the President before the class on the historical development of the Constitution and some of the more important decisions of the Supreme Court are analyzed, for example those relating to the prohibition of State laws impairing the Obligation of Contracts, the Legal Tender Cases and others of importance and paramount significance. The aim is to ground all the students in a knowledge of the elements of Constitutional Law and to give a special preparation to those about to choose the pro-

fession of the law. This is particularly kept in view in assigning the subjects for the essays which accompany the other work of the term.

**INTERNATIONAL LAW.**—This subject is taken up the last term of the Senior year. Lectures are given by the President four hours weekly. The peculiar character of this branch of law is dwelt upon, its development, the authorities and sources, and its present status.

**CIVICS.**—The President meets the Freshman Class of both departments one hour each week for their instruction by use of text-book and lecture in the elements of Civics and the duties of the citizen.

**MORAL PHILOSOPHY, CHRISTIAN EVIDENCES AND THE  
ENGLISH BIBLE.**

During the first term the Juniors and Seniors of the Classical section have an elective course in Ethics. Butler's Analogy is studied by the Juniors, and Calderwood's Moral Philosophy by the Seniors.

In the second term the Senior elective in Moral Philosophy is continued for part of the term, the latter part being given to the study of Christian Evidences. During this term the whole Classical section of the Seniors receives instruction in the English Bible by lectures.

In the third term both sections of the Senior Class pursue the study of Practical Ethics.

**PHILOSOPHY AND LOGIC.**

**PHILOSOPHY.**—The Juniors are required to prepare five recitations a week in Porter's Elements of Intellectual

Science during the first term. Fowler's and Jevons' Logics will be studied during the second term. Special courses in Philosophy will be given in Porter's Treatise on the Human Mind, Schwegler's History of Philosophy, Windelband's History of Philosophy, Fowler's and Ueberweg's Logics. In the Senior year courses in like manner will be given in Kant's Kritik, Porter's Human Mind, Descartes' Principia and Meditations and Hegel's Logic.

**ELECTIVE COURSE IN PHILOSOPHY AND LOGIC.**—This course, consisting of three recitations per week, extends through the second and third terms of the Junior year. It is intended to give an outline of the History of Philosophy, from the earliest period of Greek Speculation to the present time. Together with special Histories of Philosophy, such as Ueberweg's, Erdmann's and Windelband's, there will be studied representative works in Speculation, such as the following: Aristotle, *Metaphysics* and *De Anima*; Plato's *Theætetus* and *Parmenides*; *Fragmenta Philosophorum Græcorum* in the original; Leibnitz's *Nouveaux Essais*; Descartes' *Principia* and *Method*; Kant's *Kritik*; Hume's *Essays*; Berkeley's *Principles of Knowledge*; Janet's *Final Causes*; Butler's *Analogy*; Jevons' *Principles of Science*; Bacon's *Novum Organum*; Herschell's *Discourse on Philosophy*; Whewell's *History of the Inductive Sciences*; Sir William Hamilton's *Lectures on Metaphysics*.

In Logic, the *Organon* of Aristotle in the original will be taught, together with Trendelenburg's *Elementa* and *Logische Untersuchungen*; Hegel's *Logic*, Harris' *Trans-*

lation ; Ueberweg's Logic, Lindsay's Translation ; Mill's, Bosanquet's, Bain's, Keynes' and Davis' Logics. Essays will be required of the students on the subjects studied, and syllabi of the lectures given.

In the various prizes which are offered there will be given especial inducement for advanced work. Classes will be formed of those students who offer themselves as candidates, under the general rule governing extra work which is to receive special recognition, and these will undergo a weekly review, or even more frequently, on the books in which the prize examination will be held, and on the subjects assigned for the prize theses. These recitations will involve critical study, and be unsparing in rigor, with a view to insure thorough work, and elicit original research. These classes for special work will be at hours agreed upon between Professor and student, and additional to schedule recitations.

#### RHETORIC.

ELOCUTION.—The aim is to develop effective delivery in forms of expression. The scope of instruction embraces Physical Culture, Respiration, a Training of the Voice and a cultivation of the powers by which thought is analyzed and presented in synthetic expression.

RHETORIC.—In the department of Rhetoric, begun during the Freshman year, an effort is made to teach the principles of Composition, not as laid down in mechanical rules, but as springing from psychological laws and relations. Ideas presented in accordance with various mental

requirements and influences are shown to contain the true philosophy of rational and effective discourse.

Illustrative references to the Masterpieces of Oratory, and to other forms of the best English Classical Literature, are freely given. Essays are required throughout the entire course.

**EXTEMPORE SPEAKING.**—The Bussing Prizes for excellence in extempore speaking, recently founded, are designed to cultivate the habit of presenting clearly, forcibly and accurately, and in a manner to convince an audience, the facts and ideas a student has upon themes with which he may fairly be supposed to be somewhat conversant. The repeated competition for these prizes during the four years of the College course has already produced excellent effects.

#### THE FINE ARTS.

During the second term of this year there will be for the Seniors a course of lectures by Professor Van Dyke on old Italian and modern French painting, covering the ground in Italy from early Christian times to the Decadence following the Renaissance, and in France from the time of Francis I. to the present day. All of these lectures will be illustrated by lantern slides of the masterpieces of painting.

#### HISTORY AND ART OF TEACHING.

Instruction is given by means of lectures during one term of the Senior year to the students of the Classical Department. Others who expect to teach, or who are interested in the subject, are allowed to attend the lectures.



The object of the course is to make the student acquainted with the most important educational theories and their place in history, and to introduce him to the study of the science and art of teaching. The principal educational classics are considered, and such practical work is done by reports and discussions as the time permits.

## SCIENTIFIC DEPARTMENT.

## RUTGERS SCIENTIFIC SCHOOL.

BY ACT OF THE LEGISLATURE CONSTITUTED THE STATE COLLEGE FOR THE  
BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS.

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(APPOINTED BY THE GOVERNOR.)

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\* Died April 15th, 1893.

### 1. ADMISSION.

Every applicant for admission must be at least sixteen years of age, and must submit to the President proper testimonials of a good moral character. If an applicant for a Free State Scholarship, he must also present to the President a certificate of appointment.

Examinations for admission will be held on the same days as for the Classical Department, viz.: On the Friday and Saturday preceding Commencement week, June 15th and 16th, 1894, beginning at 10 o'clock A. M. on Friday, in the Registrar's office. Applicants for admission may also be examined on Tuesday, September 18th, at the same hour and place; but all students who can conveniently do so, are advised to be present in June.

From certain preparatory schools of established reputation students are admitted without examination, upon the Principal's certificate that they have completed the required amount of work and are prepared to enter College. Blanks for such certificates will be furnished upon application. (See page 22.) Students may enter an advanced class either at the beginning of the College year or at other times, if they sustain a satisfactory examination both on the preliminary studies and on those already passed over by the class which they propose to enter.

Provision is made for such students as wish to devote themselves to special subjects, if they are prepared to study profitably with the regular classes in those subjects; but special students are required to take sufficient work fully to occupy their entire time.

## REQUIREMENTS FOR ADMISSION.

The following are the subjects in which those who wish to enter the Freshman Class of the Scientific Department are examined. Since all are such as can be acquired in our best common schools, it is insisted that the preparation in them shall be thorough and complete. The general regulations as to conditions and their removal will be the same as those which apply to the Classical Course, and may be found on page 22.

1. **ARITHMETIC.**—Fundamental Operations; Common and Decimal Fractions; Denominate Numbers, including the Metric System; Percentage, including Interest and Discount; Proportion; Square and Cube Root.

*In preparing the student for this course, it is recommended that he be drilled thoroughly in Arithmetic, as a clear understanding of its simple elementary and practical principles is essential to a good Mathematician.*

2. **ALGEBRA** through Arithmetic, Geometric and Harmonic Progressions, or the first seventeen chapters of Bowser's College Algebra.

His preparation in Algebra should be *very thorough*. In addition to understanding the PRINCIPLES of the science he must fix them in his memory, and learn their bearing and utility, and for this reason he should pay great attention to the solution of practical examples. What is needed is ability to solve ordinary examples with facility and to explain them thoroughly.

Attention is specially called to the solution of Simultaneous Quadratic Equations, and of Equations of Higher Degrees than the Second, which may be reduced to the quadratic form, and then solved by the methods of solving quadratics.

The student should form the habit of arranging his work, whether on the blackboard or on paper, in a neat and orderly manner.

3. **GEOMETRY.**—The *whole* of Plane and Solid Geometry.

4. **ENGLISH GRAMMAR**—including Spelling.

A short **ENGLISH ESSAY** is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1894, the themes will be drawn from these books, which all students who apply for admission then should have

read carefully: Shakespeare's *Julius Caesar* and *Merchant of Venice*; Scott's *Lady of the Lake*; Longfellow's *Courtship of Miles Standish*; Scott's *Ivanhoe*; Kingsley's *Westward Ho!*

In 1895, students should be familiar with Shakespeare's *Macbeth* and *Twelfth Night*; Milton's *L'Allegro* and *Il Penseroso*; Addison's *Sir Roger de Coverley Papers*; Macaulay's *Essays on Milton and Addison*; Irving's *Sketch Book*; Longfellow's *Evangeline*; Scott's *The Abbot*.

5. DESCRIPTIVE GEOGRAPHY.

6. PHYSICAL GEOGRAPHY.

7. HISTORY OF THE UNITED STATES.—Johnston's *History of the United States*, or its equivalent.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

8. PHYSICS.—Students are required to show satisfactory acquaintance with Wells' or Cooley's *Natural Philosophy*, or Peck's *Ganot's Physics*.

9. CHEMISTRY.—Such knowledge of Chemistry as may be obtained from a thorough study of Remsen's, Cooley's or Steele's Chemistry complete. Remsen's *Elements of Chemistry* is recommended, because Remsen's text-books are used during the course.

## 2. COURSES OF STUDY.

During the first year the studies of the full courses are the same, and are designed to furnish a suitable introduction to the pursuit of the higher branches in either course.

The elements of Agriculture, of Biology and of Botany are taught during the first, second and third terms respectively. Mathematics (Algebra, Trigonometry and Surveying), Draughting, English and French are taught throughout the year.

At the end of the first year students elect to pursue one of the full courses, and for the remaining three years their studies are directed with particular reference to the choice

made. Some studies which go to the equipment of the intelligent citizen, whatever his occupation, such as History (see page 47), English Literature (see page 40), Political Economy (see page 50), Practical Ethics (see page 51), Astronomy (see page 43), and others, are interspersed throughout the entire four years, in order that students may not only acquire a thorough preparation for their special pursuits in life, but may at the same time receive a liberal training which will fit them to discharge wisely and usefully the duties of good citizenship.

Five distinct courses of study are included in the schedule which follows :

- I. A COURSE IN AGRICULTURE.
- II. A COURSE IN CIVIL ENGINEERING AND MECHANICS.
- III. A COURSE IN CHEMISTRY.
- IV. A COURSE IN ELECTRICITY.
- V. A COURSE IN BIOLOGY.

In the following schedule the Arabic numerals in light-faced type indicate the number of morning hours each week ; those in bold-faced type the number of afternoon hours. Exercises throughout the four years in Composition, Declamation and Extempore Speaking. Bible Class (optional) and Sermon each Sunday morning. Drill twice a week.

## FRESHMAN CLASS.

*Uniform Schedule for all Scientific Courses.*

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. FRENCH.—Whitney's Practical French Grammar, Part I.....	5
2. MATHEMATICS.—Bowser's Algebra, completed; Bowser's Geometry.....	5
3. PRINCIPLES OF AGRICULTURE.—Voorhees.....	2
4. RHETORIC.—Clark; Lectures; Essays.....	2
5. ENGLISH LITERATURE.—History of the Language; Lectures; Pancoast's Representative English Literature.....	1
6. CIVICS.....	1
7. DRAUGHTING.—Practice in use of Instruments; Geometrical Problems and Applications.....	4

## SECOND TERM, THIRTEEN WEEKS.

1. FRENCH.—Feuillet, Le Roman d'un Jeune Homme Pauvre; Grammar, Part II.....	5
2. MATHEMATICS.—Bowser's Geometry, completed; Bowser's Trigonometry, Plane and Spherical.....	5
3. ZOOLOGY.....	2
4. ENGLISH LITERATURE.—Pancoast's English Literature.....	4
5. DRAUGHTING.—Projections.....	4

## THIRD TERM, TEN WEEKS.

1. FRENCH.—A. de Vigny, Cinq-Mars; Lamartine, Graziella.....	5
2. MATHEMATICS.—Surveying, Carhart.....	5
3. BOTANY.—Gray's Revised Lessons.....	2
4. ENGLISH LITERATURE.—English Authors.....	4
5. DRAUGHTING.—Free-hand Drawing and Perspective.....	4

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Agriculture, Course in  
Chemistry, and Course in Biology.*

## FIRST TERM.

Hours a week.

1. EXPERIMENTAL CHEMISTRY.—Remsen (first two months).....	5
2. BLOWPIPE ANALYSIS.—Nason; Lectures (last month of term).....	
3. CHEMISTRY.—Remsen; Lectures, with Experiments.....	4
4. PHYSICS.—Ganot; Lectures.....	3
5. GERMAN.—Whitney's Brief German Grammar; Andersen's Märchen..	3
6. ENGLISH LITERATURE.—English Authors.....	1
7. CHEMICAL LABORATORY PRACTICE.—Experimental Chemistry and Blowpipe Analysis.....	9

## SECOND TERM.

1. QUALITATIVE ANALYSIS.—Fresenius; Lectures.....	5
2. CHEMISTRY.—Remsen; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—Andersen's Märchen; Haupt's Das Kalte Herz.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9

## THIRD TERM.

1. QUALITATIVE ANALYSIS.—Fresenius; Lectures.....	5
2. CHEMISTRY.—Organic Chemistry.—Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—German Science Reader, by Gove.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9



## SOPHOMORE CLASS.

*Uniform Schedule for Course in Civil Engineering and  
Mechanics and Course in Electricity.*

## FIRST TERM.

Hours a week.

1. DESCRIPTIVE GEOMETRY.—Church.....	5
2. CHEMISTRY.—Remsen ; Lectures, with Experiments.....	4
3. PHYSICS.—Ganot ; Lectures.....	3
4. GERMAN.—Whitney's Brief German Grammar ; Andersen's Märchen..	3
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Lettering.....	4

## SECOND TERM.

1. DESCRIPTIVE GEOMETRY.—Church, completed.....	} 5
2. ANALYTIC GEOMETRY.—Bowser.....	
3. CHEMISTRY.—Remsen ; Lectures, with Experiments.....	3
4. PHYSICS.—Ganot ; Lectures.....	3
5. GERMAN — Andersen's Märchen and Haupt's Das Kalte Herz.....	4
6. ENGLISH LITERATURE.—English Authors .....	1
7. DRAUGHTING.—Projections ; Intersections and Development of Sur- faces, etc .....	4

## THIRD TERM.

1. ANALYTIC GEOMETRY.—Bowser, completed... ..	5
2. CHEMISTRY.—Organic Chemistry ; Lectures, with Experiments. ....	3
3. PHYSICS.—Ganot ; Lectures.....	3
4. GERMAN.—German Science Reader, by Gove.....	4
5. ENGLISH LITERATURE.—English Authors .....	1
6. DRAUGHTING.—Shades and Shadows ; Linear Perspective, etc.....	4

## JUNIOR CLASS.

*Schedule for Course in Agriculture.*

## FIRST TERM.

Hours a week.

1. AGRICULTURE.—Farm Economy.....	3+3
2. GENERAL BIOLOGY.....	2
3. ELEMENTS OF MECHANISM.....	2
4. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....	2
5. HISTORY.—Myers.....	5
6. MILITARY SCIENCE.....	1
7. BIOLOGICAL LABORATORY PRACTICE.....	6

## SECOND TERM.

1. AGRICULTURE.—Manures and Fertilizers.....	3
2. ANATOMY OF INVERTEBRATES; VEGETABLE HISTOLOGY.....	2
3. MINERALOGY.—Lectures.....	2
4. LOGIC.—Jevons-Hill's; Mill's, unabridged.....	2
5. HISTORY.—Myers.....	3
6. ASTRONOMY.—Young's Elements.....	3
7. BIOLOGICAL LABORATORY PRACTICE.....	9

## THIRD TERM.

1. VEGETABLE PHYSIOLOGY.....	3
2. ENTOMOLOGY.—Structure of Insects.....	5
3. HISTORY OF CIVILIZATION.—Guizot.....	5
4. MILITARY SCIENCE.....	2
5. BIOLOGICAL LABORATORY PRACTICE.....	9

## SENIOR CLASS.

## FIRST TERM.

1. AGRICULTURE.—Feeding Animals.....	4
2. ENTOMOLOGY.—Systematic.....	3
3. ANATOMY OF VERTEBRATES.....	2
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4
5. GEOLOGY.—Geikie.....	2
6. BIOLOGICAL LABORATORY PRACTICE.....	9

## SECOND TERM.

1. AGRICULTURE.....	5
2. AGRICULTURAL ZOOLOGY.....	2
3. BOTANY.—Cryptogamic.....	2
4. CONSTITUTIONAL LAW.—Cooley Essays.....	4
5. GEOLOGY.—Geikie.....	2
6. MILITARY SCIENCE.....	1
7. BIOLOGICAL LABORATORY PRACTICE.....	9

## THIRD TERM.

1. AGRICULTURE.....	3
2. ECONOMIC ENTOMOLOGY.....	4
3. VEGETABLE PATHOLOGY.....	2
4. INTERNATIONAL LAW.....	4
5. PRACTICAL ETHICS.....	2
6. BIOLOGICAL LABORATORY PRACTICE.....	9
7. THESIS.....	2

## JUNIOR CLASS.

*Schedule for Course in Civil Engineering and Mechanics.*

FIRST TERM.		Hours a week.
1. DIFFERENTIAL CALCULUS.—Bowser.....		5
2. ELEMENTS OF MECHANISM.....		2
3. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....		2
4. HISTORY.—Myers.....		5
5. MILITARY SCIENCE.....		1
6. DRAUGHTING.—Lettering; Plain and Colored Topography; Machine Construction.....		4
SECOND TERM.		
1. DIFFERENTIAL CALCULUS.—Completed; Bowser's Integral Calculus....		5
2. MINERALOGY.—Lectures.....		2
3. LOGIC.—Jevons-Hill's; Mill's, unabridged.....		2
4. HISTORY.—Myers.....		3
5. ASTRONOMY.—Young's Elements.....		3
6. DRAUGHTING.—India Ink and Color Shading, etc.....		4
THIRD TERM.		
1. INTEGRAL CALCULUS.—Completed.....		5
2. RAILROAD CURVES.—Henck's Field Book.....		3
3. HISTORY OF CIVILIZATION.—Guizot.....		5
4. MILITARY SCIENCE.....		2
5. DRAUGHTING.—Copying, Tracing, Blue-Print Copying, Railroad Profiles and Cross Sections; Field Work.....		4

## SENIOR CLASS.

FIRST TERM.		
1. MECHANICS.—Bowser.....		5
2. BRIDGE-BUILDING.—Wood.....		4
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....		4
4. GEOLOGY.—Geikie.....		2
5. DRAUGHTING.—Graphical Statics, with Applications.....		4
SECOND TERM.		
1. MECHANICS.—Bowser; Completed.....		5
2. BRIDGE-BUILDING.—Completed; Bowser's Hydromechanics.....		4
3. CONSTITUTIONAL LAW.—Cooley; Essays.....		4
4. GEOLOGY.—Geikie.....		2
5. MILITARY SCIENCE.....		1
6. DRAUGHTING.—Graphical Statics, with Applications.....		4
THIRD TERM.		
1. HYDROMECHANICS.—Completed.....		5
2. GEODESY.—Lectures.....		4
3. INTERNATIONAL LAW.....		4
4. PRACTICAL ETHICS.....		2
5. DRAUGHTING.—Thesis.....		...

## JUNIOR CLASS.

*Schedule for Course in Chemistry.*

FIRST TERM.		Hours a week.
1. QUANTITATIVE ANALYSIS.—Fresenius, Cairns; Lectures.....	2	2
2. ORGANIC CHEMISTRY.—Remsen; Lectures.....	3	3
3. ELEMENTS OF MECHANISM.....	2	2
4. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....	2	5
5. HISTORY.—Myers.....	5	1
6. MILITARY SCIENCE.....	1	11
7. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	
SECOND TERM.		
1. ORGANIC CHEMISTRY.—Remsen; Lectures.....	4	3
2. MINERALOGY.—Lectures and Crystallography.....	3	2
3. LOGIC.—Jevons-Hill's; Mill's, unabridged.....	2	3
4. HISTORY.—Myers.....	3	3
5. ASTRONOMY.—Young's Elements.....	3	11
6. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	
THIRD TERM.		
1. STOICHIOMETRY.....	3	5
2. DETERMINATIVE MINERALOGY.....	5	5
3. HISTORY OF CIVILIZATION.—Guizot.....	5	2
4. MILITARY SCIENCE.....	2	11
5. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	

## SENIOR CLASS.

FIRST TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	3	5
2. PHYSICAL CHEMISTRY.—Lectures.....	5	1
3. REPORTS.—Recent Chemical Literature.....	1	4
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	2
5. GEOLOGY.—Geikie.....	2	1
6. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry.....	11	
SECOND TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	4	4
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures.....	4	1
3. REPORTS.—Recent Chemical Literature.....	1	4
4. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	2
5. GEOLOGY.—Geikie.....	2	1
6. MILITARY SCIENCE.....	1	11
7. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry.....	11	
THIRD TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	3	5
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures.....	5	1
3. REPORTS.—Recent Chemical Literature.....	1	4
4. INTERNATIONAL LAW.....	4	2
5. PRACTICAL ETHICS.....	2	1
6. THESIS.....	1	11
7. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry.....	11	

## JUNIOR CLASS.

*Schedule for Course in Electricity.*

FIRST TERM.		Hours a week.
1. DIFFERENTIAL CALCULUS.—Bowser.....		5
2. ELEMENTS OF MECHANISM.....		2
3. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....		2
4. HISTORY.—Myers.....		5
5. MILITARY SCIENCE.....		1
6. DRAUGHTING.—Machine Construction.....		4
7. PHYSICAL LABORATORY PRACTICE.....		3

SECOND TERM.		
1. DIFFERENTIAL CALCULUS.—Completed; Bowser's Integral Calculus....		5
2. MINERALOGY.—Lectures.....		2
3. LOGIC.—Jevons-Hill's; Mill's, unabridged.....		2
4. HISTORY.—Myers.....		3
5. ASTRONOMY.—Young's Elements.....		3
6. DRAUGHTING.—India Ink and Color Shading, etc.....		4
7. PHYSICAL LABORATORY PRACTICE.....		3

THIRD TERM.		
1. INTEGRAL CALCULUS.—Completed.....		5
2. PHYSICS.....		3
3. HISTORY OF CIVILIZATION.—Guizot.....		5
4. MILITARY SCIENCE.....		2
5. DRAUGHTING.—Construction, Copying, Tracing, Blue-Print Copying....		4
6. PHYSICAL LABORATORY PRACTICE.....		3

## SENIOR CLASS.

FIRST TERM.		
1. MECHANICS.—Bowser.....		5
2. PRACTICAL ELECTRICITY.....		4
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....		4
4. GEOLOGY.—Geikie.....		2
5. DRAUGHTING.—Graphical Statics, with Applications.....		4
6. PHYSICAL LABORATORY PRACTICE.....		3

SECOND TERM.		
1. MECHANICS.—Bowser's Completed.....		5
2. THEORY OF ELECTRICITY; Bowser's Hydromechanics.....		4
3. CONSTITUTIONAL LAW.—Cooley; Essays.....		4
4. GEOLOGY.—Geikie.....		2
5. MILITARY SCIENCE.....		1
6. DRAUGHTING.—Graphical Statics, with Applications.....		4
7. PHYSICAL LABORATORY PRACTICE.....		3

THIRD TERM.		
1. HYDROMECHANICS.—Bowser.....		5
2. THEORY OF ELECTRICITY.....		4
3. INTERNATIONAL LAW.....		4
4. PRACTICAL ETHICS.....		2
5. PHYSICAL LABORATORY PRACTICE.....		3
6. DRAUGHTING.—Thesis.....		3

## JUNIOR CLASS.

*Schedule for Course in Biology.*

	FIRST TERM.	Hours a week.
1. GENERAL BIOLOGY.—Parker's Lessons.....	5	
2. ELEMENTS OF MECHANISM.....	2	
3. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....	2	
4. HISTORY.—Myers.....	5	
5. MILITARY SCIENCE.....	1	
6. BIOLOGICAL LABORATORY PRACTICE.....	9	
SECOND TERM.		
1. VEGETABLE HISTOLOGY.—ANATOMY OF INVERTEBRATES.....	5	
2. MINERALOGY.—Lectures.....	2	
3. LOGIC.—Jevons-Hill's; Mill's, unabridged.....	2	
4. HISTORY.—Myers.....	3	
5. ASTRONOMY.—Young's Elements.....	3	
6. BIOLOGICAL LABORATORY PRACTICE.....	9	
THIRD TERM.		
1. EXTERNAL ANATOMY OF INSECTS; VEGETABLE HISTOLOGY.....	3	
2. HISTORY OF CIVILIZATION.—Guizot.....	5	
3. MILITARY SCIENCE.....	2	
4. ENTOMOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	

## SENIOR CLASS.

	FIRST TERM.	
1. SYSTEMATIC ENTOMOLOGY; ANATOMY AND EMBRYOLOGY OF VERTEBRATES.....	9	
2. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
3. GEOLOGY.—Geikie.....	2	
4. BIOLOGICAL LABORATORY PRACTICE.....	9	
SECOND TERM.		
1. VEGETABLE PHYSIOLOGY; ANATOMY AND HISTOLOGY OF MAMMALS.....	9	
2. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	
3. GEOLOGY.—Geikie.....	2	
4. MILITARY SCIENCE.....	1	
5. BIOLOGICAL LABORATORY PRACTICE.....	9	
THIRD TERM.		
1. INTERNAL ANATOMY OF INSECTS; ECONOMIC ENTOMOLOGY; ECONOMIC BOTANY; VEGETABLE PATHOLOGY.....	9	
2. INTERNATIONAL LAW.....	4	
3. PRACTICAL ETHICS.....	2	
4. ENTOMOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	
5. THESIS.....	100	

## COURSE IN AGRICULTURE.

The object of this course is to provide a broad scientific training, which is now recognized as essential to the best life on the farm.

The major studies of this course include Applied Agriculture, Biology, Botany and Entomology.

**AGRICULTURE.**—In the first term, Junior year, the student is instructed in business methods, relations of weather to farming, the characteristics of the different breeds of farm animals, their care and management, and their adaptability to the various purposes and conditions, and their general economic relations.

The study of the principles of scientific agriculture and their application to the different lines of farm practice, is continued throughout both the Junior and Senior years. The elements contained in the atmosphere and soil being the basis of all vegetable and animal life, the student is instructed in the transformations which take place in these elements in the production of crops, in the growth of animals, and in the principles which govern their conversion into products of the highest economic value.

While suitable text-books are used, the instruction, in both the principles and their application, is imparted mainly by lectures.

**ANIMAL BIOLOGY.**—In the Freshman year the students in Agriculture pursue Zoology two hours a week, the second term, reciting with the other students of the Scientific School.

In the Junior and Senior years, Fall and Winter terms, students in Agriculture devote two morning hours and two afternoons a week to General Biology, as follows: General Biology of Plants, first half Fall term, Junior year; General Biology of Animals, second half of same term; Invertebrate Zoology, Winter term.

Vertebrate Zoology and Comparative Embryology, in the Fall term, Senior year; Comparative Anatomy of the Domesticated Animals and Economic Zoology in the Winter term.

For further details see the fuller description of these courses under the Course in Biology. While students in Agriculture devote less time to biological subjects than is required of regular students in Biology, with whom they meet, the portions of the work to which they give attention are chosen with especial reference to their needs. The study of the anatomy of domestic animals is furthered by demonstrations from a fine Auzoux model of the horse.

**BOTANY.**—For Freshman work in Botany, see page 47.

In the second term of the Junior year, the students examine with the compound microscope the minute structure of the leaves, stems, roots, flowers and seeds of various plants. The accompanying class-room exercises consist of recitations upon, and elaborations of, the work pursued in the laboratory.

During the third term the microscopic study of plants is continued, time being taken for making an herbarium of fifty species of flowering plants, named and neatly mounted.

In the second term of the Senior year a course of lec-



tures is given upon vegetable physiology, and laboratory exercises are continued with ferns, mosses, lichens, algæ, etc. During the third term special attention is given to the various kinds of parasitic fungi, including rusts, mildews, moulds and blights so destructive to crops.

ENTOMOLOGY.—In the third term of the Junior year Entomology will be taught chiefly by lectures and laboratory practice. Comstock's "Introduction to Entomology" will be used as a text, and during this term a knowledge of the external and internal structure of insects and of their physiology will be given. Especial attention will be paid to those features which have a bearing on the applied or economic side of the science. In the Senior year an outline of the classification will be given, and the orders will be taken up separately; the most injurious insects in each order serving as types. The collection contains examples of these in all their stages, and the laboratory work will be largely directed to the practical handling of and dealing with the insects in all forms. Insecticides and insecticide machinery will be taken up in the last term and the underlying principles of their successful use will be taught.

For students of Agriculture, not candidates for a degree, provision has been made for College instruction by means of the College Extension system, and in a winter lecture course of six weeks at the College.

#### COURSE IN CIVIL ENGINEERING AND MECHANICS.

During the last three years, the students in this course are instructed in Descriptive Geometry, Analytic Geom-

etry, Railroad Curves, Differential and Integral Calculus, Analytic Mechanics, Hydromechanics, Civil Engineering, Bridge-Building and Geodesy, and have practice two afternoons a week in Draughting, with Exercises and Problems in Geometrical Constructions, in Descriptive Geometry, Topographical, Mechanical and Architectural Drawing and in Graphical Statics.

Students in this course, and in the Chemical and Agricultural Course, in addition to the special and technical studies of their course, pursue such studies in English, Rhetoric, Elocution, French, German, Metaphysics, Moral Philosophy, the Duties of Citizenship and the Natural Sciences as are calculated to make them broadly educated and intelligent citizens, and not mere narrow specialists.

#### COURSE IN CHEMISTRY.

During the last three years, students in this course are instructed in General, Experimental and Agricultural Chemistry, Crystallography, Blowpipe Analysis, Descriptive and Determinative Mineralogy, Analytical, Organic, Applied and Theoretical Chemistry.

The course of study depends, to some extent, upon the student's future pursuit in life.

**EXPERIMENTAL CHEMISTRY** is taught in the recitation-room by carefully conducted quizzes and full work in the laboratory. The student's first and general knowledge of chemistry is obtained by his own observation.

**BLOWPIPE ANALYSIS** comprises the study of the various reactions and the analysis of a number of substances.

Laboratory work is accompanied with constant quizzing in the recitation-room.

GENERAL CHEMISTRY is taught from a text-book fully illustrated by experimental lectures, during two terms of the Sophomore year. An endeavor is made to make the student understand the sure basis of fact on which the science of Chemistry rests, and to reason for himself from these facts. He is also taught to make a careful distinction between facts and theories, and not to confound that which is proved with that which is merely speculative.

ORGANIC CHEMISTRY begins in the third term of Sophomore year, so that students looking towards Agriculture and Biology, as well as Chemistry, can get some idea of the chemical changes connected with their prospective subjects before more detailed study comes. The general behavior of carbon in its compounds is considered, and the different classes it forms, as well as their relations, are studied so that the fundamental chemical changes concerned in the growth of plant or animal can be properly understood by students in these courses.

In the first and second terms of Junior year the subject is continued by those in the Chemical Course, and then the development becomes more detailed. The student is constantly questioned and expected to show a thorough knowledge of all principles developed in the text-book. He also is given imaginary problems and taught how to plan an investigation with carbon compounds, thereby

gaining a theoretical knowledge of the methods of research in this subject. Laboratory work follows in the Senior year.

The lectures are accompanied by full experimental illustrations.

**ANALYTICAL CHEMISTRY.**—The chief object of a scientific course is to teach how to study nature, how to put questions, how to interpret the answers. So the student commences with experiments on bodies of known composition, performing those experiments that characterize common, simple substances, until he is perfectly familiar with the reactions, both theoretically and experimentally, the theoretical part being considered in the class-room. Then complicated bodies are examined, until most difficult substances are readily analyzed, and the student is ready for

**QUANTITATIVE ANALYSIS**, which is taught in a similar way. The student first analyzes substances of known composition until perfectly familiar with the peculiar manipulation in this subject. Then he proceeds to substances of unknown composition. Through one College year, instruction is given, with recitations and questionings during the first term.

At the end of the year, the student has gained a knowledge of Analytical Chemistry sufficient for all ordinary purposes, and therefore, in the Senior year, he can profitably take up such special branches as may seem best for him.

**STOICHIOMETRY**, the mathematics of chemistry, is taught by lecture, recitation and blackboard drill.

**APPLIED CHEMISTRY.**—The application of Chemistry to the arts and manufactures is taught by lectures and text-book. Whenever it is practicable, the actual products are exhibited to the students, and the manufacturing processes reproduced in miniature. Attention is drawn to the scientific relations and connections between the various manufactures. The great losses by imperfect methods of manufacture and by waste products are pointed out, and the student is taught to see the true economy of production. Illustrative of the lectures, visits are made to various manufacturing establishments, of which there are a number in and about New Brunswick, and an opportunity is given to see manufacturing operations in actual working.

**PRINCIPLES AND THEORIES** of Chemistry having recently developed in a very remarkable way, form a most important branch of Chemistry. Accordingly, the subject extends throughout the Senior year. The instruction begins with a discussion of the atomic weights and the general chemical properties of gases. Then liquids and solids are considered from a chemical point of view, particular attention being paid to chemical action in solution. The course is so arranged that at the end students have a clear idea of modern chemical thought.

Owing to the exceedingly careful observations required, few experiments can be performed in the class-room, but the student is encouraged to become more familiar with the subject by experiments at his desk.

After finishing experimental organic chemistry, the student takes up work for his thesis chosen by him, but subject to the approval of the instructor.

**MINERALOGY** is taught in the Junior year. In the second term there is a course of lectures in Descriptive Mineralogy, in which the general characters of minerals are discussed, and some of the most important species are carefully studied. Special attention is paid to **CRYSTALLOGRAPHY**, as being one of the most distinguishing characteristics, and therefore much used in Determinative Mineralogy, which occupies the third term. In this part of the course the student learns to make the tests by which minerals are distinguished from each other, and becomes familiar with their differences by actual handling and comparison. In this course use is made of the College collections, supplemented by the private collection of the Professor in charge.

**GEOLOGY** is studied in the first and second terms of the Senior year. A text-book is used, but each lesson is explained in advance and fully illustrated by the use of specimens, with which the College is abundantly supplied.

#### **COURSE IN ELECTRICITY.**

This course is similar to that in Engineering, Electrical subjects being substituted for Railroad Curves, Bridge-Building, Geodesy and Hydromechanics.

The object of this course is to prepare graduates for such positions as do not demand the full mechanical equipment of a professional electrical engineer.

Work in the Physical Laboratory begins with the Junior year and consists of a general course of experimental work in Physics. The work done in the laboratory is designed

particularly to acquaint the student with physical measuring apparatus and with the general nature of careful quantitative work. The earlier and simpler work serves chiefly to give practice in the use of methods or instruments which serve later as accessories. This is followed by experimental work in the mechanics of solids, liquids and gases and in heat and electrical measurements, the latter occupying the whole of the Senior year.

Accurate work is required throughout. Manual skill and preference for mechanical details are prime requisites for electrical pursuits, hence those who enter the course will be required to do the most exact work possible, and expected to show cheerful patience in tedious manipulations. The laboratory is provided with engines, dynamos, motors and all apparatus necessary for all kinds of Electrical Testing and Measurement. Training is given in the handling of dynamo machines, both generators and motors, and in the principal methods of testing them.

In connection with the laboratory instruction of the Senior year it is customary for the class, under guidance of an instructor, to visit various typical electric light and power plants, the apparatus of which is thoroughly explained.

#### COURSE IN BIOLOGY.

While this course is introductory to medical and special biological studies, it is adapted to the purposes of a general education. Scientific and Classical students electing this course, and also Agricultural students, must divide the time nearly equally between three departments (Zoology,

Botany, Entomology) during the Junior and Senior years, according to the following

SCHEDULE FOR ELECTIVE BIOLOGY.

	JUNIOR YEAR.		SENIOR YEAR.	
First term.....	General Biology of Lower Cryptogams.	General Biology of Lower Invertebrates.	Systematic Entomology.	Anatomy of Lower Vertebrates.
Second term....	Vegetable Histology.	Zoology of Higher Invertebrates.	Vegetable Physiology.	Anatomy and Histology of Domestic Animals.
Third term....	Vegetable Histology.	Anatomy and Physiology of Insects.	Vegetable Pathology.	Systematic and Economic Entomology.

DEPARTMENT OF ANIMAL BIOLOGY (OR ZOOLOGY).—Required studies: Two hours weekly, Winter term, Freshman year. This portion of the work is a general survey of the primary facts of Comparative Biology, especially as they elucidate Human Anatomy and Physiology. It is practically the Extension Course in Zoology. The method of instruction is by means of lectures, quizzes and demonstrations of charts, specimens and Auzoux models. Opportunity to do a small amount of laboratory work is offered. The object is to obtain such a knowledge of the structure and affinities of the primary groups of animals as will aid in the study of Historical Geology pursued later, and as also may enable a person to appreciate the more popular of the biological discussions of to-day. Those who enter higher classes without pursuing this part of the course must



give satisfactory evidence of mastery of such works as Martin's "The Human Body" (Briefer Course), and Orton's "Comparative Zoology," or their equivalents.

Elective studies: These begin in the Junior year, as shown in the above schedule. For the number of hours, see the schedule for the "Course in Biology" on page 68. The work is mainly in the laboratory and is pursued by means of microscope and scalpel. The student sketches and describes the objects studied. Supplementary lectures are given. Each student provides himself with Parker's "Lessons in Elementary Biology" and a small case of instruments. Other apparatus, microscopes and materials are provided in the laboratory, for which a fee is required. The following subjects are studied in the order mentioned:

1. General Biology of the lower Plants.—Fall term, Junior year. Topics: Fermentation (Yeast), Fungi (Mucor, Penicillium), Bacteria, Algæ (Pleurococcus, Hæmatococcus, Spirogyra), Chara, Moss, Fern, Alternation of Generations in higher Plants.

2. General Biology of the lower Invertebrates.—Fall term, Junior year. Topics: Protozoa (Amœba, Vorticella, etc.), Coelenterates (Hydra, Hydroids, Sponges), Vermes (Earthworm, etc.)

3. Zoology of the higher Invertebrates.—Winter term, Junior year. Topics: Echinoderms (Starfish, etc.), Molluscs (Oyster, Clam, Snail), Arthropods, (Lobster and other Crustacea).

4. Anatomy (and Zoology) of the lower Vertebrates.—

Fall term, Senior year. Topics: Fish, Frog, Turtle, Pigeon, Embryology of the Fowl.

5. Anatomy of the domesticated Mammals (Mammalian Morphology).—Winter term, Senior year. Dissection of Cat or Dog; Practical Histology.

Comparative Anatomy, Osteology and Embryology are taught in connection with the Vertebrate Anatomy of the Senior year.

Economic or Agricultural Zoology, including a study of the laws of Heredity, Breeding, etc., is either involved in or presented incidentally with the foregoing subjects.

The following books are used as guides—Zoology: Claus and Sedgwick; Marshall and Hurst. Anatomy: Brooks' Invertebrates; Wiedersheim's Vertebrates. Embryology: Foster and Balfour; Haddon.

Also the works of Huxley, Howell, Wilder, Wilson, Martin, Parker, etc.

**BOTANY.**—The study of Botany, two hours a week, begins in the third term of the Freshman year, and the ground covered is embraced by "Gray's Revised Lessons." In connection with the text-book work, each student makes drawings and descriptions of leaves, stems, roots and other parts of plants. This is followed by a thorough study of the flower from living specimens gathered in the field. The terms used in Descriptive Botany are dwelt upon so that each member of the class becomes familiar with the methods of determining the botanical names of plants, and acquaints himself with the relationship of genera and orders.

Laboratory study in Botany begins in the second term of the Junior year, and students then pursue a course in vegetable anatomy with the compound microscope, in which they are introduced to the various kinds of tissues and tissue systems as illustrated in the leaves, stems and roots of the higher plants. In the third term, laboratory practice is continued with the histology of the organs of reproduction, and the collecting of plants in the field begun. Each student prepares an herbarium of at least fifty species, all neatly mounted and fully labeled.

The Seniors, in their second term, have a course of lectures upon Vegetable Physiology, special attention being paid to the origin of varieties through cross-fertilization and other causes. In the laboratory, each member of the class becomes familiar, microscopically, with the histology of cryptogams, particularly those best enforcing the principles in Physiology considered in the class-room. The third term is specially devoted to a consideration of those low organisms that are so obscurely known under the general term of the fungous diseases of plants, and embracing one branch of Economic Botany, now called Vegetable Pathology.

**ENTOMOLOGY.**—In the third term of the Junior year, Entomology will be taught, chiefly by lectures and laboratory practice. Comstock's "Introduction to Entomology" will be used as a text, and during this term a knowledge of the external and internal structure of insects and of their physiology will be given. Especial attention will be paid to the morphological and biological side of the science.

In the Senior year the system of classification will be given, and the students will be required during laboratory hours to prepare, classify, and arrange collections, in part made by themselves. A very full collection of the insects of the United States will assist in acquainting the student with the family types. The aim will be to give such a knowledge of the subject as a whole, as will enable the student to specialize without further assistance should he desire to continue the study at the conclusion of the course.

#### MILITARY DEPARTMENT.

This department is in charge of the Professor of Military Science and Tactics, an officer of the regular army, detailed by the War Department for the purpose.

Instruction is both practical and theoretical.

**PRACTICAL.**—The student, on entering College, is drilled in the School of the Soldier, including bayonet exercise, and is advanced, successively, to the Schools of the Company and Battalion.

Considerable attention is given to target practice, the College being supplied with latest-model Springfield rifles and a liberal supply of rifle ammunition.

**THEORETICAL.**—During the Junior and Senior years, elementary instruction, by means of lectures and recitations, is given in the Art and Science of War, Modern Tactics, Modern Small Arms and Cannon, Explosives, Military Correspondence and Reports, Care of Troops in the Field, Military and Martial Law and other military subjects.

**UNIFORM.**—A uniform consisting of cap, blouse and trousers of dark-blue cloth, has been adopted, the cost of which is about \$14, or considerably less than that of a good suit of civilian's clothes. The entire suit is neat and serviceable, and, while required to be worn at drills, may be worn on any occasion.

**MILITARY DRILL** is required of all students in the Scientific Department, except as they may be excused by reason of conscientious scruples, physical disability or some similarly valid reason.

In the Gymnasium erected during the present year, a drill-room and armory have been provided for purposes of military instruction.

The object of instruction in this department is not only to comply with the requirements of the laws of Congress for the State Colleges organized under the Act of July 2d, 1862, but also to improve the health and physique of students, and to give that elementary military knowledge which every citizen should possess, that he may render intelligent and effective aid to his country or State in case of war or riots.

**ANNUAL REPORT OF THE SCIENTIFIC DEPARTMENT.**

More extended information as to the studies and courses in the Scientific School will be found in the Annual Report of the New Jersey State Scientific School to the Governor and Legislature of New Jersey, which will be sent to any address on application to the Registrar.

### 3. ORGANIZATION.

Rutgers Scientific School has been designated by the Legislature of New Jersey, in accordance with the law of Congress of July 2d, 1862,

THE STATE COLLEGE FOR THE BENEFIT OF AGRICULTURE  
AND THE MECHANIC ARTS.

FREE SCHOLARSHIPS.

Under the law, a certain number of students from the State of New Jersey are received into this department of the College, and educated free of expense for tuition. This law also provides for the appointment by the Governor of a Board of Visitors, two from each Congressional District, who possess general powers of supervision and control. The State pupils are admitted to free scholarships on the recommendation of the Superintendent of Schools in each county, and on passing the required examinations. These free scholarships are distributed among the counties in proportion to their population, as follows :

STATE SCHOLARSHIPS.

ATLANTIC, . . . . .	1	MIDDLESEX, . . . . .	2
BERGEN, . . . . .	1	MONMOUTH, . . . . .	2
BURLINGTON, . . . . .	3	MORRIS, . . . . .	2
CAMDEN, . . . . .	2	OCEAN, . . . . .	1
CAPE MAY, . . . . .	1	PASSAIC, . . . . .	2
CUMBERLAND, . . . . .	1	SALEM, . . . . .	1
ESSEX, . . . . .	6	SOMERSET, . . . . .	1
GLOUCESTER, . . . . .	1	SUSSEX, . . . . .	1
HUDSON, . . . . .	6	UNION, . . . . .	2
HUNTERDON, . . . . .	1	WARREN, . . . . .	1
MERCER, . . . . .	2		—
			40

In June, 1888, the Trustees, to express their appreciation of the action of the Legislature in making the first appropriation yet made to further the work of the State College, voted to give to the young men of New Jersey

**TEN ADDITIONAL FREE SCHOLARSHIPS "AT LARGE."**

By a law passed March 31st, 1890, establishing

**A FREE SCHOLARSHIP FOR EACH ASSEMBLY DISTRICT EACH YEAR.**

provision is made for affording the advantages of a liberal course of study, free of expense for tuition, in the State Agricultural College to the students in the schools in all parts of the State, who shall be selected as follows: "A competitive examination, under the direction of the City Superintendents and the County Superintendent of Education, in each county, shall be held at the County Court House in each county of the State, upon the first Saturday in June in each year."

The examination will be held on June 2d, 1894, and candidates for Free Scholarships will be examined in the subjects required for admission, as stated on pages 58 and 59.

The law provides that if several properly qualified candidates for appointment pass the examination from the same Assembly District, all who are suitably qualified shall receive appointment to such free scholarships, excess from certain Assembly Districts being counterbalanced by vacancies in other Assembly Districts, provided only that the

entire number of appointees shall not exceed the entire number of Free Scholarships created by the State.

Letters of inquiry to the President, or to the Registrar, will receive careful attention.

THE NEW JERSEY STATE AGRICULTURAL COLLEGE  
EXPERIMENT STATION.

By the Act of Congress of March 2d, 1887, a law was passed entitled "An act to establish Agricultural Experiment Stations in connection with the Colleges established in the several States under the provisions of an act approved July 2d, 1862, and of the acts supplementary thereto." This act is commonly known as the "Hatch Act," from the active interest taken in its passage by Hon. William H. Hatch, M. C., of Missouri. It authorizes the appropriation of \$15,000 annually for the support of Agricultural Experiment Stations in connection with the Colleges which were established in the several States "for the benefit of Agriculture and the Mechanic Arts," by the Congressional Act of July 2d, 1862.

The Legislature of New Jersey, by its acts of March 16th, 1887, and of March 5th, 1888, designated the Trustees of Rutgers College "as the parties to whom all moneys appropriated by Congress under said acts of Congress or supplements thereto shall be paid for the purposes mentioned in said acts of Congress." The department of Rutgers College known as Rutgers Scientific School is, by law, the State Agricultural College. The Agricultural Experiment Station is established in connection with it.

By the co-operation of the State Experiment Station, a



large and well-fitted laboratory has been erected, and investigations are in progress upon the insect enemies of plants, upon the food-products of our fresh and salt waters, and their improvement, upon the diseases of plants, and the application of science to the growth of agricultural and horticultural products, and upon the food consumption and the value of the products of the best breeds of dairy cattle.

While the main business of such a Station is in searching after new truths, and arranging them for practical and economic use, the proper location for it is in connection with an institution of learning. Almost all our investigators are teachers. The investigation and diffusion of knowledge necessarily go hand in hand; and the example of men devoted to the searching for useful truths is stimulating to those who are yet in their preparatory studies, and are aspiring to fill well their places in life.

It is from those now preparing that our future investigators must come, and it is important that they should have those who are now in the field of work directly before them. In this respect it is believed the location of the Station at the College will be most salutary in its influence.

#### EXTENSION DEPARTMENT.

The work of the Extension Department has been growing rapidly and steadily since its inception. During the last year the attendance at the various courses exceeded 1,300, and more than 600 were enrolled in the accompanying classes. The work is conducted in strict accordance with the methods of "University Extension." A course of lecture studies consists of the following elements:

- (a) A series of lectures.
- (b) A printed syllabus.
- (c) A class-hour, or hour of conference following each lecture.
- (d) Written exercises by members of the class.
- (e) An examination open to those who have taken the whole course.
- (f) Certificates issued to successful students.

Every part of this work is voluntary. Many simply attend the lectures and do not enroll themselves as students, but all are encouraged to take the full course, since a far better knowledge of the subject can thus be obtained. All courses consist of twelve lecture-studies unless otherwise specified. For the season of 1893-94 the following courses are offered, to which additions will be made later:

#### AGRICULTURE.

##### SOILS AND CROPS, (6).

By Professor Edward B. Voorhees, A.M.

This series of lectures will include, under soils, a discussion of the origin, formation and distribution of soils, their chemical composition, physical properties, relations to temperature, and soil-water, exhaustion, methods of improvement, tillage and drainage; and under crops, a discussion of the origin, habits of growth, composition, characteristics, methods of rotation, cultivation, management and uses of the leading farm, orchard and garden crops.

##### THE FOOD OF PLANTS, (6).

By Professor Edward B. Voorhees, A.M.

In these lectures will be discussed the constituents of plants, their sources and functions; farmyard and green manures, waste products and their composition, properties and uses of concentrated or artificial manures, the sources, composition and uses of phosphatic, nitrogenous and potassic compounds; methods of manufacture of prepared fertilizers. Considerable attention will also be given to economical methods of buying manures, the preparation of formulas and the methods of application and use for the various crops.

**ANIMAL NUTRITION, (6).**

By Professor Edward B. Voorhees, A.M.

In these lectures the principles of nutrition will be discussed with particular reference to the formation of the various animal products. This will include a study of the composition of the animal body and its relation to food, the composition of fodders and feeds, their digestibility and proper use for the various animals, the relative value of natural and artificial grasses, the formation and improvement of permanent pastures, the buying of feeds and the preparation of rations, and the manurial value of feeds. The principles of breeding, and the importance of pure breeds of domestic animals, and their relations to improved farming; breeds for the dairy, dairy management, the composition of milk and of the various dairy products will also receive attention.

**HOW CROPS GROW, (6).**

By Professor Byron D. Halsted, Sc.D.

A course of lectures upon the structure and uses of the various organs of vegetation, together with a consideration of some of the more serious enemies to cultivated plants and methods of overcoming them; weeds, their habits, seeding capacity and methods of treatment; dodders, and other parasites, rusts, mildews, smuts, blights, etc.; spraying trees and herbs with fungicides. These lectures are illustrated with the lantern and by means of numerous wall-charts, maps and the specimens themselves.

**ECONOMIC ENTOMOLOGY, (6).**

By Professor John B. Smith, Sc.D.

In this course only so much anatomy and physiology of insects will be given as to make intelligible the philosophy of the application of insecticides; transformation and reproduction of insects; injurious insects, insecticides; time of application; when remedial and when preventive; formulas; fertilizers as insecticides. These lectures will be illustrated by models and lantern slides.

**APPLICATIONS OF THE PRINCIPLES OF PHYSICS, (6).**

By Professor F. C. Van Dyck, Ph.D.

Introductory lecture on matter, force, work, energy, power; the mechanical powers, levers, pulleys, wheel and axle, inclined plane and screw; principles of water-supply, water-power, windmills, etc.; heating and ventilation;

the steam engine and its applications; principles of electricity as applied to lightning protection, alarms and small power.

### CONSTRUCTION OF ROADS, BRIDGES AND DRAINS, (6).

By Professor A. A. Titsworth, M.S., C.E.

Telford, Macadam and other roads in relation to local conditions and cost of construction, illustrated by diagrams; economics of good roads; bridges on country roads, best and cheapest structures, sizes of timber; graphical methods of determining strains; drainage, best European practice with applications to conditions of climate and soil here, simple methods of leveling for drains.

### GEOLOGY, (6).

By Professor Frank L. Nason, A.M.

The formation of the world, its crust, ocean basins, mountains, sedimentary deposits, rocks; succession of life, fossil animals and plants; volcanoes and earthquakes; how minerals are brought within reach of man; water, hot and cold springs, alluvium, deltas, flood-plains, ice, glaciers, moraines, etc.; formation of soils, their composition and use; inorganic matter as food and in the arts.

### THE FINE ARTS.

#### GREEK, HELLENISTIC AND ROMAN ART.

By Professor Edgar S. Shumway, Ph.D.

1. Archaic Greek art—the temple and marble sculpture; the riper archaic.  
2. Period of the great masters—(a) The dawn—Pythagoras, Myron. (b) Epoch of Pheidias—the art of Pheidias, the Parthenon and the Zeus of Olympia, the Theseion, the Erechthelon, the temple of Nike, the art of Polykleitos.  
(c) Epoch of the Corinthian style—Palonios, Kephisodotos. (d) Epoch of Praxiteles—the art of Praxiteles, of Skopas, ethical *pathos*, the Mausoleum, the Niobids, the art of Lysippos, idealizing portraiture. 3. Hellenistic art—Pergamon, Rhodes, Samothrace, proportions, heads, drapery, portraiture, athletes, barbarians, children, physical *pathos*, the gigantomachy of Pergamon. 4. Roman art—(a) The last century of the Republic. (b) The Empire.

#### OLD ITALIAN AND MODERN FRENCH ART, (13).

By Professor John C. Van Dyke, L.H.D.

Early Christian and Mediæval painting; Romanesque and Gothic painting; Early Renaissance—the Florentines; the Umbrians, Bolognese and Paduans;

High Renaissance—the great Florentines, Bartolommeo and Albertinelli, Michael Angelo and Raphael, Giulio Romano and the Roman school; Leonardo da Vinci, Andrea del Sarto and Correggio—the early Venetians; the great Venetians, Giorgione, Titian, Tintoretto and Paolo Veronese—Decadence in Italy and rise of French painting; Classicists of the First Empire; Romanticists and New-Greeks; Realists and Naturalists—peasant painters; the figure under the Semi-Classicalists and history painters.

#### HISTORY.

##### THE BEGINNINGS OF MODERN HISTORY,

By Professor Edward L. Stevenson, Ph.D.

This course is a study of the Renaissance and Reformation periods. The rise of the spirit of liberty and individualism; the revival of learning and the delight in beauty, manifesting itself in the Renaissance of painting, sculpture and architecture; the invention of printing; the great voyages and discoveries; the formation of modern nationalities; the beginnings of the modern physical sciences. The Renaissance and Reformation were closely related. The latter will be studied from the religious, political and social standpoints. The sources for the history of the period will be studied so far as is possible.

##### THE FRENCH REVOLUTION,

By Professor Edward L. Stevenson, Ph.D.

The Revolution will be studied in its relation to France and to the other European States. Attention will be directed to its causes, remote and immediate; to the course of affairs from the opening of the States General, through the Reign of Terror; to the rise of Napoleon and to his career as affecting society; the politics and the geography of Europe; to the men, measures, and particularly Constitutions of France through a quarter of a century.

##### THE FORMATION AND ESTABLISHMENT OF THE UNITED STATES AS A NATION,

By Professor Edward L. Stevenson, Ph.D.

The course will consider the causes tending to produce union among the American Colonies, the rise of the national idea, the formation of the Constitution, the development of the nation during the first twenty-five years of its existence. It will also be a study of prominent men and their measures contributing to the establishment of the Constitution.

## VITAL FORCES IN MODERN HISTORY, (6).

By Professor James F. Riggs, D.D.

History as a fine art, and history as a moral science, nature of historical evidence; beginnings of modern life, republics of Italy, free cities, their guilds, wealth, etc.; the educational uprising, universities, inventions and discoveries; balance of power as a political dogma; re-organization of society by the double process of decay and growth; unification of Italy, the romance and the tragedy of Italian history.

## THE PROTESTANT REFORMATION, (6).

By Professor James F. Riggs, D.D.

Causes; social and political re-organization, papal system and monastic system, the revival of learning; reform in Germany, life and triumph of Martin Luther; in Holland, relation to Spain, William the Silent; the "Thirty Years War," Gustavus Adolphus, Richelieu, treaty of Westphalia; reform in England, Tyndale and the Bible, Queen Mary and Queen Elizabeth, Oliver Cromwell; consequences of the Reformation.

## THE EASTERN QUESTION, (6).

By Professor James F. Riggs, D.D.

Asiatic empires, the Orient of to-day; Mohammed and Mohammedanism, Arabs and Turks, the Ottoman empire; Constantinople, its history under the Byzantine emperors and under the sultans, its topography and fortifications; the Crimean war, Sebastopol, the Black Sea fleet and the treaty of Paris; English power in India, rivalry between Russia and Great Britain, the Sepoy mutiny; the present outlook for the East.

## LITERATURE.

## THE ENGLISH BIBLE, (6).

By Professor William Rankin Duryee, D.D.

History of the versions from Anglo-Saxon times, sketches of leading translators, general view of contents with special attention to literary force; the Old Testament, historical books; poetical books, with characteristics of Hebrew poetry; prophetic books, with sketch of the development of the prophetic functions; the New Testament, general characteristics, analysis of the first Gospel and general description of the remaining Gospels; Acts of the Apostles with analysis of contents and brief description of the Epistles of St. Paul; nature and style of the last Epistles and the Revelation.

## ENGLISH LITERARY STYLE,

By E. S. Nadal, A.M.

The intention of this course is to give suggestions by which a sense may be formed of English literary style; it is proposed to do this in lectures on Thackeray, White of Selborne, Byron, Gray and Collins, Wordsworth, Pope, Matthew Arnold, Johnson, De Quincey, Bryant, Lowell, American humorists.

## STUDIES IN ROMANTIC POETRY,

By Lincoln R. Gibbs, A.M.

This course will be mainly devoted to the romantic poetry of the period 1789-1832, including, however, some discussion of Burns and Lamb. The attempt will be made to study individual writings and men rather than general literary movements. There will be one lecture as an introduction to the period; one each on Burns, Coleridge, Scott, Byron, Lamb and Keats; two on Wordsworth; and three on Shelley.

## PHILOSOPHY.

## THE WORLD'S GREAT THINKERS,

By Professor Jacob Cooper, D.D., D.C.L.

A course of lectures on mental philosophy, treating the subject historically. Introduction: Wonder originated philosophy, seeking reality under phenomena. Socrates—the talker; Plato—the ideal philosopher; Aristotle—the logical systematizer; Lucretius—the skeptic, Cicero—the dealer in second hand; Abelard—the lover, Aquinas—the hair splitter; Descartes—the renovator, Spinoza—the pantheist; Leibnitz—the universal genius, Pascal—the thinker; Kant—the transcendentalist; Hegel—the obscure, Schopenhauer—the pessimist; Bacon—the philosophic statesman, Locke—the sensationalist; Hume—the agnostic, Berkeley—the idealist; Reid—the philosopher of common sense, Schleiermacher—the philosopher of religion; Hamilton—the critic, Porter—the expositor.

## HOW WE KNOW,

By Reverend John B. Thompson, D.D.

This introductory course on psychology includes these topics: the six senses; sensation, illusion, hallucination, feeling, attention, consciousness; space, time, cause, identity and similarity, perception; memory, association, dreams, somnambulism, hypnotism, imagination; reasoning, judgment, the concept, deduction, induction; the beast mind, the human mind.

## SCIENCE.

## ASTRONOMY,

By Professor Robert W. Prentiss, M.S.

The first six lectures will deal with the solar system, treating of the sun and its phenomena; spectrum analysis and the constitution of the sun; the moon, its appearance, motions, scenery and physical conditions; the terrestrial planets, Mercury, Venus, the Earth and Mars; the major planets, Jupiter, Saturn, Uranus and Neptune; comets and meteors, their mutual relations. The system of the stars will be discussed in four lectures, treating of the fixed stars; multiple stars, star-clusters and nebulae; the nebular origin of stars; the extent of the universe. The two concluding lectures will give an account of the instruments and methods of modern astronomy; the great telescopes of the world; astronomical photography.

## BOTANY,

By Professor Byron D. Halsted, Sc.D.

The course consists of six lectures upon the following subjects: 1. The seed, its origin, structure and uses. 2. Stems and roots, giving the various kinds and functions of each. 3. Leaves—forms, structure and modifications for various purposes. 4. Flowers, their parts and functions. 5. Fruits, their kinds, etc. 6. Flowerless plants, as ferns, mosses, algae and fungi, including mildews, moulds and many other microscopical forms. The second half of the course includes practical plant dissection, the object being to impart a working knowledge of the analytical key and the methods of making a collection (herbarium) of dried plants.

## CHEMISTRY,

By Professor Peter T. Austen, Ph.D., F.C.S.

This course is an introduction to the study of chemistry. Nearly 200 experiments are performed with simple apparatus so arranged that the members of the class can repeat many of them at home. The chief topics treated are the fundamental principles of the science and its applications; air and water; oxygen, hydrogen and nitrogen; ammonia, nitric acid, nitrous oxide, etc.; carbon and its compounds, combustion; bromide, iodine and fluorine; sulphur and phosphorus; arsenic, antimony and silicon; potassium, sodium, ammonium and calcium; magnesium, zinc, copper and silver; aluminium, iron, nickel, cobalt, manganese and chromium; acids, bases and salts; lead, tin, gold and platinum; food; the atomic theory.



**ELECTRICITY,**

By Professor F. C. Van Dyck, Ph.D.

The fundamental facts of static electricity and the fluid theory; technical terms and units; frictional and induction machines, condensers; natural phenomena; principles and practical applications of magnetism; voltaic couples, measuring instruments, arrangements of circuits, Ohm's law; decomposition by the current, laws of electrolysis, counter electromotive force, storage cells; heating of conductors by current, production of current by heat.

**ENTOMOLOGY,**

By Professor John B. Smith, Sc.D.

This course is intended to give an outline of the structure, habits and systematic classification of insects in general. The lectures will be illustrated by models and lantern slides, and the subjects taken up will include the external structure, the circulation and respiration, the organs of nutrition and assimilation, the nervous system and sensory organs, the transformations, homes, social organization and breeding habits, and a brief characterization of each order. It is intended, throughout, to contrast the insect structures with those of higher animals and to pay especial attention to those that are useful rather than injurious to man.

**GEOLOGY,**

By Professor Frank L. Nason, A.M.

The formation of the world, its rock crust, ocean basins, sedimentary deposits, rocks, mountains; succession of life, fossil animals and plants; volcanoes and earthquakes; how minerals are brought within reach of man; water, hot and cold springs and their work; alluvium, flood-plains, ice, glaciers, moraines, etc.; formation of soils, their composition and use; inorganic matter as food and in the arts; building and ornamental stones, what gives them their value; mines and mining, metalliferous deposits; coal, oil and natural gas, their origin and how to search for them; plastic and refractory materials, clay, sand, etc.; precious and semi-precious stones, how they occur; the microscope in terrestrial geology, and the spectroscope in the geology of other worlds than ours, aerolites, meteorites and what they teach us, or geology revealed by sunlight and starlight; the work of geologists and how amateurs may contribute to geological science; local geology.

**MINERALOGY,**

By Professor A. H. Chester, E.M., Ph.D., Sc.D.

This series of lectures will take up at first the general principles of the science, discussing it under each of the several branches into which it is divided. Later some of the more characteristic minerals will be described, particularly those which are used as ores. Crystallography will receive special attention. The course will be illustrated by specimens from the College collections, and from that of the lecturer.

**ZOOLOGY,**

By Professor Julius Nelson, Ph.D.

This course begins with a study of the oyster, after which the sub-kingdoms are taken up in order, beginning with the lowest forms of life and ending with the highest, as follows: life, protoplasm and cells; animalcules and sponges, jellyfish and corals; worms; lobsters, etc.; clams, snails, etc.; starfishes and sea urchins; sea squirts, fishes and frogs; reptiles and birds; mammals.

The cost of these courses to any organization in the State constituting itself an Extension Centre averages about \$20 a lecture, but those requiring illustration with the lantern or by means of experiments are somewhat more expensive. Details will be given on application. This charge entitles a centre to the entire course and to 75 copies of the syllabus. No bill of extras will be rendered. If more than 75 copies of the syllabus are required they may be had at 10 cents a copy. These are the charges for the work under all heads except that of Agriculture. For the courses in Agriculture the price has been set at \$10 a lecture-study. This is only possible through the generosity of friends of the late Dr. George H. Cook, who purpose to develop thus the work begun by him for the benefit of the farmers of New Jersey.

All inquiries should be sent to Louis Bevier, Jr., the Secretary of the Extension Department.

## EXAMINATIONS.

The classes in both departments are examined at the close of each term. These examinations are partly oral and partly written, and have an important bearing upon the standing of the student in his class.

Unexpected examinations at irregular intervals are held at the discretion of each instructor. The object of these examinations is to cultivate the habit of considering the relations of each day's work to what has been done before, and to stimulate effort on the part of each student to gain a comprehensive knowledge of the subjects studied.

At the end of the first and third terms, the examinations of the classes of the Scientific Section are held in the presence of the Board of Visitors, who then make their semi-annual visits to the institution.

At the end of the third term, each member of the Graduating Class of the Scientific Section is required to present a thesis on some scientific subject, a copy of which is written out upon paper suitable for binding, and deposited in the College Library.

The final examination of the Graduating Classes is held four weeks before Commencement, from which time they are subject to such duties as are required for their preparation for Commencement.

Students who receive conditions at the June Examinations must report at College prepared to be examined upon

the whole of each of the subjects on which they have conditions, at 10 A. M. on the Tuesday before College opens, in September.

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## GRADUATION.

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To all members of the Graduating Class of the Classical Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Arts.

To all members of the Graduating Class of the Scientific Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Science.

To students, in either Department, who have satisfactorily pursued special courses of study, a certificate is granted stating the studies pursued and the attainments made.

The following regulations have been adopted by the Board of Trustees regarding the graduating exercises at Commencement :

1. There shall be three scholarship honors in each section of the Graduating Class, awarded to those students who shall stand first, second and third respectively, in all the required studies of the Classical or Scientific curriculum, provided that in each individual case the student so standing shall rank among the first four in the major subject or subjects of his elective course.

2. There shall be no distinction by way of comparison

between the scholarship honors of the Classical School and those of the Scientific School.

3. The three scholarship honors of each School shall be designated as follows :

CLASSICAL SCHOOL.

First Honor—Philosophical Oration.  
Second Honor.  
Third Honor.

SCIENTIFIC SCHOOL.

First Honor—Scientific Oration.  
Second Honor.  
Third Honor.

4. An oration to be known as the Rhetorical Honor shall be awarded to that member of either section of the class who shall have received the highest grade in Composition and Elocution during the Junior and Senior years, provided he rank in general grade of scholarship among the first half of his class in all of the required subjects of the Classical or Scientific curriculum.

A student may receive either one of the three Scholarship Honors and the Rhetorical Honor, but he shall deliver only one oration at Commencement.

5. Two other orations shall be awarded according to grade in Composition and Elocution during the Junior and Senior years, provided the recipients rank among the first half of either section in general grade of scholarship in all of the required subjects of their curriculum.

DEGREES AND POST-GRADUATE STUDIES.

The Faculty will recommend for the degree of Master of Arts or Master of Science candidates otherwise properly qualified, who, after taking the appropriate Bachelor's degree—

1. Shall pursue for at least one year at Rutgers College a course of liberal and non-professional study, approved by the Faculty, and shall, beside the term examinations, pass a thorough examination on that course and present a thesis on some topic connected with it; or,

2. Who, not less than three years after taking the Bachelor's degree at Rutgers College, shall make application for the Master's degree, presenting at the same time a certificate of graduation from a Theological Seminary, a Law School or a Medical School, or of admission to the practice of Law or Medicine; or,

3. Satisfactory evidence by thesis or otherwise of successful labor in education or literature pursued during three consecutive years and of advanced studies prosecuted; or,

4. In case of Bachelor of Science, satisfactory evidence of successful professional work actually done and advanced professional studies prosecuted.

The degrees of Ph.D. and Sc.D. may be conferred upon resident graduates of the College who shall pursue for two years prescribed courses of study under the direction of the Faculty.

The conditions will be made known on application.

The degree of Civil Engineer is a professional one, and is, on application, conferred upon graduates of the College who have taken the degree of Bachelor of Science, and subsequently have passed three years in the practice and study of engineering, with results satisfactory to the Faculty.

The applicant is required to furnish a statement of the work upon which he has been engaged, and to present a

thesis or discussion of some engineering work which he has done. The application and thesis must be presented to the Secretary of the Faculty at least one month before Commencement.

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## REGULATIONS.

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Morning prayers are attended in the College Chapel each morning, except Saturday and Sunday, at 8:40 o'clock.

A Bible Class, attendance at which is voluntary, is held Sunday morning in the College Chapel at 9:30 o'clock.

A sermon is preached every Sunday morning in the College Chapel at 10:30 o'clock. Students are required to be present.

They are expected, also, to attend public worship in the afternoon or evening, at such place as their parents or guardians may direct.

No student is allowed to leave the city during term time without permission from the President or the Registrar.

Excuses for absence from all College duties must be obtained from the Registrar.

Unexcused absences are reported to the Faculty; and a student is not allowed to make up the recitations omitted, but receives zero as a mark.

Recitations, except in Elective subjects, are marked on a scale of 100, and the average standing of each student is made up at the end of each term, and sent to his parent

or guardian. A mark at examination counts as much as one-third of the term's work up to the time of examination.

If the grade for the term's work previous to the examination, in any subject, fall below 60 per centum of the maximum, the student will be conditioned in that subject.

If the grade of any student in any study at any time fall below 60 per centum of the maximum, his case will be acted on as the Faculty shall deem necessary.

If any student's average grade in any term fall below 60 per centum of the maximum, he will lose his standing in his class, and be required to fall back a year in the course, unless all his deficiencies shall be removed before the opening of the next term.

Marks given in ELECTIVE work do not enter into the computation of grade; and the only official report of work done in Elective subjects is the announcement, at the end of each term, in each student's report, that he has "failed" or "passed," or "passed with honor," in each of his elective courses.

If any student shall be found notably deficient in his daily recitations, or at the examination in any of his studies, his case will be reported to the Faculty, and such action by way of discipline will be taken as may be deemed necessary.

No student can be promoted to an advanced class until all his deficiencies are made up; and if he fail to make up all his deficiencies before the opening of the College year, he will cease to be a member of his class. Examinations for making up such deficiencies are held at 10 A. M. on the Tuesday before the opening of the Session in September.



## COLLEGE EXPENSES.

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**FEES.**

Tuition, per annum, . . . . .	\$75 00
Incidentals—Janitor, Fuel, Reading-Room, per annum, . . . . .	10 00
Admission Fee, . . . . .	5 00
Graduation Fee, . . . . .	7 50
Analytical Chemistry, extra, per term, . . . . .	15 00
Electricity, extra, per term, . . . . .	10 00
Biology, extra, per term, . . . . .	5 00

Of the above expenses, the admission fees are payable on entrance, to the College Treasurer; the incidental expenses are payable at the beginning of the first term, in September; of the tuition fees, one-third, viz., \$25, is payable within ten days after the beginning of each term. All checks should be made payable to the Treasurer of Rutgers College.

Students in the Scientific Courses are required to procure sets of draughting instruments, costing from \$10 to \$20. They are advised to defer the purchase of these instruments until entering College, as they will then have the advantage of procuring them under the direction of the Professor of Draughting.

Students in Analytical Chemistry are charged \$15 additional a term, for chemicals and use of laboratory, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with the necessary sets of apparatus, which may be obtained from the regular appa-

ratus dealers, or from the Laboratory Supplies department. These sets are retained through the year, but at the end of it, if the owners do not wish to keep them, they will be purchased at a fair price. If proper care has been exercised, a small discount only (about 10 per cent.) from the original cost will be made. All breakage will be charged in full.

Students in the Electrical Course are charged \$10 extra, a term, throughout the Junior and Senior years, for the use of laboratory and apparatus, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with files, pocket magnifiers and towels. All damage to College apparatus will be charged in full.

Students in Biology are charged \$5 extra, a term, for the use of instruments and laboratory, which amount must be paid within ten days after the beginning of the term.

Students in the Classical Course, electing Physics, are charged \$5 extra, a term, for the use of the laboratory and apparatus, which amount must be paid within ten days after the beginning of the term.

### BOARD.

Board, with furnished room, can be obtained in New Brunswick at the present time for \$4 to \$7 a week; board without rooms for \$3 to \$5 a week. Students having the ministry in view may obtain rooms in Hertzog Hall, in the Theological Seminary, free of charge. These rooms are heated and lighted.

For information in regard to the dormitory—Winants Hall—see page 132.

The Faculty are empowered to pass such regulations relative to the number of boarders in each house as they think proper ; and students shall board only at such places as are approved by them.

By combining in clubs, students are able to reduce somewhat their expense for board.

Free scholarships and pecuniary assistance may be given to young men of approved character and ability, whose family circumstances are such as to make this assistance necessary. No deserving student who has shown perseverance and capacity is allowed to give up his course for lack of assistance.

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## BENEFICIARY AID.

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A student who is preparing for the ministry of the Reformed Church in America and who needs pecuniary assistance, may be placed on one of the Beneficiary Funds which the Trustees hold in trust for the purpose ; *provided*, that he engage to pursue his studies uninterruptedly until he shall have completed his theological course in one of the theological schools under the care of the General Synod of the Reformed Church in America, in accordance with the requirements of that Church, Art. 2, Sec. 2.

All who are placed on these funds receive \$150 annually.

**1. Van Benschoten Fund.**

This fund, the gift of the Rev. ELIAS VAN BENSCHOTEN, in 1814, amounting to \$20,813, was given in trust jointly to the General Synod of the Reformed Church and the Trustees of Rutgers College, to aid in the education of indigent students for the ministry. The students who enjoy the benefits of this fund are appointed by the Trustees of the College on the nomination of the General Synod of the Reformed Church.

**2. Knox Fund.**

This fund, consisting of \$2,000, was given by Mrs. REBECCA KNOX, of Philadelphia, in 1815, to the Trustees of Rutgers College, the income from it to be expended for the support of one student in the Theological Seminary.

**3. W. H. Smock Fund.**

WILLIAM H. SMOCK, of Marlboro, N. J., left by his will, to the Trustees of Rutgers College, the sum of \$500, to be invested as a fund, the interest of which should be used to aid in the education of young men for the ministry. This legacy was received in 1859, and has been duly employed since that time for the purpose named.

**4. Mandeville Fund.**

In 1865, the Trustees of Rutgers College received from the executor of the will of WILLIAM MANDEVILLE, of New York City, the sum of \$2,000, to be invested and the income thereof to be applied to the support of a theological student in the College.

**5. Voorhees Fund.**

ABRAHAM VOORHEES, of Franklin Park, N. J., bequeathed by his will \$26,000 to the Trustees of Rutgers College, the income of which is to be expended in aiding worthy young men who are candidates for the ministry, while pursuing their studies in Rutgers College.

**6. The Brownlee Memorial Fund.**

This fund consists of \$2,000, the income of which is to be used for purposes of ministerial education. It was given in 1891 by Mrs. WILLIAM A. BLOODGOOD, of New York, in memory of her father, the late Rev. WILLIAM C. BROWNLEE, D.D., who was at one time Professor of Languages in the College, and afterwards for many years an active and efficient Trustee.

**7. Free State Scholarships.**

The law of the State of New Jersey granting to the Scientific Department of Rutgers College the Agricultural College Endowment, provides for the education of forty State students free of expense for tuition. These scholarships are distributed among the counties in proportion to their population, and the appointments to fill vacancies are made by the County Superintendents. The appointment gives the right to a course of instruction of four years in Rutgers Scientific School, to students successfully passing the entrance examinations.

The Trustees of the College, in 1888, voted ten additional scholarships "at large" for students from New Jersey in the Scientific School.

By a law of the State passed March 31st, 1890, a free scholarship for each Assembly District each year is established. See pages 85, 86.

#### 8. Board of Education.

The Board of Education of the Reformed Church grants aid to young men preparing for the ministry in the denomination. The conditions are that the persons receiving aid shall have been members of some Evangelical Church one year, and at the time members of some Reformed Church. The aid may be obtained either while in College or in the Theological Seminary.

At present the amount given is \$150 per annum. Information may be had by addressing the Secretary of the Board, 25 East 22d street, New York City.

#### 9. Rooms for Students.

Such rooms in Peter Hertzog Hall as may not be required for the use of the students of the Theological Seminary, are allowed to be occupied by the students of the College who have the ministry in view, and on the same conditions as the members of the Theological Seminary, *i. e.*, free of charge.

## HONORS AND PRIZES.

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In every case where it is expected that a prize will be awarded for work done, it is distinctly announced that unless in the opinion of the examiners the work submitted is of such excellence as to merit a prize or prizes, no prize will be awarded.

Whenever a prize requires both an essay and an examination, the essay must be handed in before the hour fixed for the examination.

All prizes and honors are open equally to members of the Classical and Scientific Departments, except in cases where prizes are specially limited to one department by the donor. Each competitor for a prize must sign a written declaration that the essay or other work offered by him is his original and unaided work. The essays are to be written on a paper of a prescribed kind, and the successful essay is to be deposited in the College Library, before the writer is entitled to the prize.

### 1. HONORS.

#### 1. Honors in Elective Studies.

Department or Individual Honors may be granted in each elective subject. Of these there are two in each Classical course, and one in each Scientific course. Such an honor will be granted to that student who stands highest in the particular elective subject, on two conditions:

1. Provided that he stand in the first third of the Classical or Scientific Section of his class in the required studies of his course ; and,

2. Provided that he be recommended to receive that honor by the Professor or Professors who have instructed him in the elective subject or subjects.

Competition for individual or department honors shall begin where the courses begin to diverge, *i. e.*, with the first term, Junior year, in the Classical Department, and with the first term, Sophomore year, in the Scientific Department.

**2. Honorable Mention for Work outside the Course done  
without Reference to a Prize.**

For the encouragement of independent reading and study and original investigation, under the direction of the Faculty, honorable mention is made of students who give evidence of thoroughness in such work, and pass a satisfactory examination.

John Henry Carnes, of the Class of 1895, receives honorable mention for work done and examinations passed in German, minimum requirement, 300 pages.

**2. PRIZES.**

**1. Suydam Prize for Composition.**

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall write the best English Composition on the subject assigned to the class by the Professor of Rhetoric.



Competitors must hand in their compositions on or before April 20th. Subject for 1894: "English Critics of the Nineteenth Century."

**2. Suydam Prize in Natural Science.**

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall have made the greatest attainments in Natural Science. The examination is upon all the subjects of Natural Science in the College course, Astronomy, Biology (including Physiology and Zoology), Botany, Chemistry, Geology and Physics, and is conducted by the Professors of those subjects. The questions and answers are required to be written.

**3. Brodhead Classical Prize.**

This prize is the gift of Rev. Dr. JACOB BRODHEAD and his son, J. ROMEYN BRODHEAD, LL.D. It is the interest on \$500, *i. e.*, twenty-five dollars, to be given to the best Senior Classical scholar, on the following conditions:

First. "That those who offer themselves as candidates for it shall be subjected to a special examination, at a time to be fixed by the Faculty near the close of the Senior year."

Second. "That the subject of the examination be a passage or play of some classical author (not included in the College programme of studies), to be selected by the Classical Professors, and to be announced at least one month before the time fixed for the examination."

Third. "A subject for an essay shall be announced at the same time, and the essay shall be given in on the day of examination."

Fourth. "Both the examination and the essay shall be taken into account in the adjudication of the prize. A law copy of the essay of the prize-man shall be handed in by him before the medal is put into his hands, to be preserved among the archives of the College."

(a) Subject of Essay to be written in Greek, not less than ten (10) thesis pages: "The Causes of the Sicilian Expedition."

(b) Text for Examination in Greek: Thucydides, Books VI. and VII.

#### **4. Bradley Mathematical Prize.**

This prize was established by the late Hon. JOSEPH P. BRADLEY, LL.D., Class of 1836, and is maintained by his son, CHARLES BRADLEY, Esq., of the Class of 1876. It consists of a valuable Mathematical work, which is to be bestowed on the student of the Senior Class who shall present the best solution of a set of Mathematical problems to be proposed to the class by the Professor of Mathematics before the close of the second term.

#### **5. Myron W. Smith Memorial Prizes for Declamation.**

These prizes were founded by LYNDON A. SMITH, M.D., of Newark, in the name of his son, Adjutant MYRON W. SMITH, who was a graduate of the College in the Class of 1858, and who gave his life in the late war to the cause of his country. They consist of the interest of \$500 (twenty-five dollars), proportionately appropriated to two medals,

one of gold and the other of silver, which are to be awarded respectively to the best and second-best speakers of the Sophomore Class. Only those students who shall have pursued, in the College, the regular studies of the Classical or a full Scientific course from the beginning of the Freshman year, shall be allowed to contend for these prizes.

The competition for these medals shall take place before a committee of the Faculty, when the best and second-best speakers shall be selected, to whom the medals shall be awarded, and six others shall receive honorable mention in their order of excellence. The medals shall be presented at Commencement.

**6. Tunis Quick Prize in Spelling and in English Grammar.**

This prize, the gift of the late P. VANDERBILT SPADER, Esq., of New Brunswick, is the income of \$300, at 5 per centum, and is to be presented to that member of the Freshman Class, Classical or Scientific, who shall pass the best examination in Spelling and in English Grammar.

The examination is to be conducted in writing by the Professor of English Literature, at as early a day as convenient in the second College term, and under such regulations as the Faculty may from time to time establish.

The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition. In case the prize be not awarded in any year, it is to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prize, are subject to change by the Board of Trustees.

**7. Peter Spader Prizes in Modern History.**

These prizes, the gift of the late P. VANDERBILT SPADER, Esq., are two in number, the income of \$400 and \$300, respectively, at 5 per centum, and are to be awarded to those members of the Sophomore Class, Classical or Scientific, who shall present the best essays on some subject in Modern History, selected by the Professor of History, with the approval of the Faculty.

The subject is to be announced at the close of the Freshman year, and the competing essays are to be handed in on or before the last Monday in May of the Sophomore year.

The committee annually appointed by the Faculty may decline to award these prizes, or either of them, for want of merit in the essays, or for failure of proper competition. In case the prizes be not awarded in any year, they are to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prizes are subject to change by the Board of Trustees.

Subject for 1894: "The Public Services of John Marshall."

**8. Appleton Memorial Prize in Moral Philosophy.**

This prize was founded by a gift of \$500, from the Rev. SAMUEL E. APPLETON, D.D., in the name of his mother,

**Mrs. ELIZABETH APPLETON.** It consists of twenty-five dollars, the interest of the above sum, and will be given "to the member of the Senior Class who shall pass the best examination in Moral Philosophy."

For 1894: Examination upon Bowne's "Principles of Ethics."

**9. Bowser Engineering Thesis Prize.**

A prize consisting of a valuable Engineering work is given by Professor E. A. BOWSER, LL.D., to that member of the Engineering Section of the Senior Scientific Class who shall present the best thesis upon some Engineering subject at graduation.

**10. John Parker Winner Memorial Prize in Mental Philosophy.**

This prize consists of twenty-five dollars, given by JOHN WINNER, Jr., and his wife, in memory of their deceased son, JOHN PARKER WINNER. It will be open to competition for students in both the Classical and Scientific Sections who are pursuing the study of Mental Philosophy, and will be bestowed on the one who shall pass the best examination on some work assigned by the Professor of Metaphysics.

Work for 1894: Examination upon Ueberweg's "History of Philosophy," Vol. II., Modern Philosophy.

**11. William H. Van Doren Prize for the Best Essay on Christian Missions.**

This prize consists of twenty dollars, the gift of the Rev. WILLIAM H. VAN DOREN, D.D. It is open to competition

for members of the Senior and Junior Classes in both sections, and for members of the Theological Seminary.

Subject for 1894, essay limited to 3,000 words: "The Progress of Home Missions during the last Twenty-five Years."

#### 12. Junior Exhibition.

Eight members of the Junior Class in the regular courses are chosen each year, on account of their abilities in Composition and in Elocution, who deliver original speeches at an exhibition held on the Monday evening preceding Commencement. The selection is made by a committee of three persons appointed for that purpose by the Faculty.

A prize of twenty-five dollars, the gift of RALPH N. PERLEE, Esq., of New York City, is awarded by a special committee at the time of the exhibition to that orator who shall be adjudged the best writer and speaker among the contestants.

#### 13. Hart Prize in English Literature.

A prize of twenty-five dollars is offered to the members of the Sophomore Class for the best essay upon a subject in Literature; the theme is assigned by the Professor of that Department, and the prize is awarded by a committee appointed by him.

Subject for 1894: "Alexander Pope."

#### 14. The Bussing Prizes for Extempore Speaking.

Mrs. ANN VAN NEST BUSSING, of New York City, has given to the College \$1,000, the income of which (fifty dollars per annum) is to be expended each year for books,

which shall be selected by the President of the College, and given as follows: The First Prize, of thirty dollars, to that member of the Senior Class who shall prove himself to be the best extemporaneous speaker; the Second Prize, twenty dollars, to the second-best extemporaneous speaker of the Senior Class. The prizes are to be awarded by the Faculty of the College, or by a committee whom they shall name, and shall be awarded after a public debate to be held in the latter part of the College year. In awarding the prizes, "strict attention shall be given to logical and forcible presentation of thought, full and accurate information as to matters of fact, and grace and effectiveness in delivery." For the sake of training students in the clear expression of intelligent thought upon matters of public interest, each class has an exercise in extempore speaking twice in each term. The subject is announced to the class, and, after five minutes for thought, the members of the class discuss the subject or debate the question before a committee.

**15. Van Vechten Prize—Essay on Christian Missions.**

A. V. W. VAN VECHTEN, Esq., of New York City, has founded, in honor of his mother, the late LOUISA VAN VECHTEN, and his father, Rev. SAMUEL VAN VECHTEN, D.D., a prize of sixty dollars, by the gift of \$1,000, the prize "to be given annually to that student of Rutgers College who shall be adjudged by the Faculty of the Theological Seminary of the Reformed Church of America, at New Brunswick, to have presented an article, original with himself, and the best submitted—the most conclusive and inspiring to strengthen faith in and love for Foreign

Missions." The essays are limited to 3,000 words, and are to be presented on or before May 1st of each year.

Subject for 1894: "The Theory of Education in Foreign Missions."

**16. The Class of 1876 Prize Fund for the Encouragement of the Study of Political Philosophy.**

The Class of 1876 have given to the College one thousand dollars (\$1,000) as the foundation of a Prize Fund (which they express the hope that they may increase from time to time, until it shall be sufficiently large to establish a Fellowship), for the encouragement of the study of Political Philosophy. The income of this fund is to be awarded each year "to that member of the Senior Class (either Classical or Scientific) who shall be adjudged entitled to it, \* \* \* on the basis of an original essay on some subject in Political Philosophy, assigned by the Professor of that science in the College, and upon a competitive examination in a text-book also selected by him;" the committee of award to consist of "three competent persons selected by the Faculty of the College, at least one member of the committee to be a member of the Class of 1876 as long as any may be living."

(a) Subject of essay for 1894: "The Fall of the Federal Party."

(b) An examination upon Stanwood's "A History of Presidential Elections."

**17. Upson Prize in American Literature.**

For the encouragement of study in American Literature, a prize of fifty dollars is offered by the Librarian, to be



awarded by a committee appointed by him, to that member of the Junior or Senior Class who shall write the best essay upon a subject assigned by him, and upon the following conditions :

First. The essay, of not more than 5,000 words, must be presented in writing upon the standard thesis paper of the College, with the understanding that the original copy is to be preserved in the College Library.

Second. Each competitor must sign his essay with a fictitious name, according to the general rules of the College, and hand it to the Librarian on or before May 1st, 1894.

Third. The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition.

Subject for 1894 : "The Genius of Edgar Allan Poe."

#### **18. The Bradley Prize in Roman Law.**

This prize was founded by the Hon. JOSEPH P. BRADLEY, late Associate Justice of the Supreme Court of the United States, and is maintained by his son, CHARLES BRADLEY, Esq. It consists of a valuable work on Roman Law.

The subject of the essay for 1894 will be : "Roman 'Verbal' Contracts."

The examination upon text will include Dig. lib. XLV., tit. 1.

The prize may be competed for by Seniors and Juniors.

#### **19. The Class of 1866 Prize for Attainments in Electrical Science.**

The Class of 1866, being the Centennial Class after the grant of the first charter, has established a prize of fifty

dollars, to be awarded to that member of each graduating class who has taken a full course leading to the degree A.B. or B.S., including the higher mathematics and physical laboratory practice, and who has shown, in the judgment of the Faculty, the greatest degree of proficiency in the science of Electricity.

A special examination, conducted by an appropriate committee of the Faculty, will be held Saturday, May 19th, 1894, at 2 P. M., to select the recipient of the prize. If, in the opinion of the committee, none of the competitors deserve the prize, it will be withheld.

**20. The Delta Phi Senior Orator Prize.**

A prize of twenty-five dollars is offered by the Epsilon Chapter of the Delta Phi Fraternity to that member of the Senior Class who shall write and pronounce the best English Oration.

The basis of award of this prize shall be as follows:

Essays shall be written upon any one of certain subjects designated by the Faculty and submitted to a committee thereof.

From these essays, the best, not to exceed five in number, shall be chosen, and their writers having given these essays such form as may best suit the purpose, shall pronounce them in public before a committee appointed by the Faculty, who shall thereupon adjudge the prize.

**21. The Luther Laflin Memorial Prizes in Metaphysics.**

These prizes are given by LUTHER LAFLIN KELLOGG, Esq., of New York City, in memory of his grandfather, LUTHER LAFLIN, deceased.

The first prize of seventy-five dollars will be open to students of either the Junior or the Senior Class in both the Classical and Scientific sections, and will be bestowed on the one who shall pass the best examination on some work and shall submit the best essay on some theme assigned by the Professor of Metaphysics.

(a) Subject for essay in 1894: "A Critical Examination of Anselm's and Descartes' Ontological Proof of the Existence of God."

(b) An Examination upon Porter's "The Human Intellect."

The second prize of fifty dollars will be open to students of either the Junior or the Senior Class, in the Scientific Section only.

(a) Subject for essay in 1894: "The Philosophical Value of Teleology as an Argument for the Existence of God."

(b) An Examination upon Janet's "Final Causes."

#### 22. Barbour Prizes in Speaking.

These prizes, two in number, of the value of fifteen dollars and ten dollars respectively, are offered by the Instructor in Elocution. The eight members of the Freshman Class of either section in regular course who shall stand highest in Elocution during the entire year may compete before a committee appointed by the Faculty.

#### 23. Prize in Logic (\$50).

Open to Classical Students in full standing only.

(a) Examination upon Ueberweg's "History of Logic and Logical Doctrines."

(b) Subject for Essay: "A Criticism of Bain and Hamilton's 'Quantification of the Predicate.'"

**24. A Prize in Logic (\$50).**

Open to Scientific Students in full standing only.

(a) Examination upon Mill's "A System of Logic."

(b) Subject for Essay: "How do we arrive at the Knowledge of the Middle Term?"

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## BUILDINGS AND EQUIPMENT.

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**QUEEN'S COLLEGE**—Erected 1808-1809. This building occupies the central position of the group of College buildings. It contains nine recitation rooms, a commodious lecture hall and the offices of the President and of the Registrar.

**THE FINE ARTS BUILDING**—Erected 1841-1842. The residence of former Presidents of the College has been refitted for the uses of the Fine Arts Department of the College, and is known as The Fine Arts Building. It contains the art collections of the College, including "The Thomas L. Janeway, M.D., Memorial Collection" of casts, and the various gifts of friends of the institution.

The pictures, models, casts and photographs are arranged to represent, as far as possible, the art of the world. A new lecture-room, having adequate facilities for illus-

trating lectures by the stereopticon and otherwise, is in use, and the arranging and classifying of the Museum is going forward. Acquisitions are being continually made to the Museum and every facility for illustrating the history of art is being added to the department. Besides the lectures of the Professors in charge of this department, subjects related to the fine arts will be treated from time to time by other lecturers.

**The Thomas L. Janeway, M.D., Memorial Collection**

to illustrate Classical Archæology, is the gift of the heirs of Dr. THOMAS L. JANEWAY, of the Class of 1863.

It already includes (1) eight casts from marbles typical of the chief periods in the history of sculpture. These casts were manufactured by Brucciani & Co., of London. (2) Five hundred casts from engraved gems (cameos and intaglios) and coins, Greek and Roman. These were selected with an eye both to the study of the development of the art and to the especially full illustration of its best achievements. The workmanship on these casts is that of Augustus Ready, of the British Museum. (3) Eight hundred stereopticon slides, of which all but eighty-two were made by the well-known Levy, of Paris. (4) One thousand photographs and restorations. Among the photographers are Bonfils, of Beirut; Sommer, of Naples; Anderson, of Rome; Mansell, of London; Lombardi, of London; Quaas, of Berlin; Hauteœur, of Paris, etc., etc.

The collection, made in Europe by a member of the College Faculty, is designed to illustrate the topography, art, life and literature of Ancient Greece and Rome, and for this purpose is used constantly by College classes.

VAN NEST HALL was erected in 1845, and named for Abraham Van Nest, Esq., a liberal trustee, in recognition of his services and gifts to the College.

In 1893 it was beautified by the addition of a stone porch, the gift of Mrs. Ann Van Nest Bussing, daughter of Abraham Van Nest, who at the same time refitted the eastern portion of the second story into a handsome hall for the regular and occasional exercises of the students in Elocution.

During the same year the Trustees added a third story to the original building, thus creating a large and well-lighted room for the use of the classes in Draughting. On the second floor is another room for the advanced work in Graphics.

The rooms of the Peithessophian and Philoclean Literary Societies are on the first floor.

The building also contains the collections for illustrating the instruction given in the Engineering courses, comprising a great variety of models showing details of construction in wood, iron and stone, with a full set of Schröder and many Olivier models in Descriptive Geometry, besides blue prints, working drawings and lithographs of roof and bridge trusses. A complete outfit of Engineering and Surveying instruments is owned by the College for the use of the students in the Surveying classes.

THE DANIEL S. SCHANCK OBSERVATORY, erected in 1865, is a two-story brick building, with revolving dome, constructed especially for astronomical work. It contains in the main part the equatorial refracting telescope,

mounted on a pier of solid masonry extending several feet below the surface of the ground, and detached from the floors, through which it rises, so as to be unaffected by the tremors of the building. The telescope is eight feet four inches in focal length, with an aperture of six and one-half inches, and was made by the late Henry Fitz, of New York. It has a small telescope attached for a finder, a driving clock, a position micrometer, a number of eye-pieces of various powers ranging from 50 to 600 and a solar attachment for the study of sun-spots. The declination circle is ten inches in diameter, reading by verniers to one minute of arc, and the hour circle, seven and one-half inches in diameter, reads by verniers to six seconds of time.

On the west side of the main part is an extension for transit observations. The meridian circle used for this work was made by Stackpole, of New York, and has an object-glass four inches in diameter and four feet ten inches in focal length, with circles seventeen inches in diameter, reading by two microscopes with micrometer screws to single seconds of arc. The diaphragm carries one horizontal and seven vertical wires. There is also a striding spirit-level and an apparatus for reversing the axis of the instrument. The bearings rest on two stone pillars, supported by piers of masonry.

The observatory has also a sidereal clock, by Wm. Bond & Son, the gift of John Clark, Esq., of New Brunswick, with an electrical break-circuit; a mean solar clock, the gift of the Peithessophian Society of Rutgers College, and a reflecting circle, the gift of the Philoclean Society of

Rutgers College, and several barometers and thermometers.

The observatory is in connection with the Western Union Telegraph line, so that time-signals may be exchanged with other observatories. The whole building and the instruments are illuminated by the electric light. The instruments are all in good working condition, and the student of practical astronomy has here unusual facilities for learning the theory and use of astronomical instruments. The observatory is used in connection with the course in general astronomy to give a knowledge of the sun, moon, planets, etc. Those who elect Mathematics and Astronomy receive instruction in the use of the instruments and take part in the observations. Post-graduate students can take a still more extended course.

The longitude of the observatory is  $0^h 10^m 25.08^s$  east of the old Naval Observatory, Washington, D. C.

The latitude is  $40^\circ 29' 57.6''$  N.

**GEOLOGICAL HALL**—Erected 1871. The Physical Department occupies seven rooms on the main floor, and two in the basement. There are two lecture-rooms, an apparatus room, three general laboratories, one laboratory for work requiring even temperature, a battery-room and an office.

The lecture apparatus comprises the usual instruments. The laboratories contain general apparatus, such as dividing engine, a set of United States standard weights and measures, metric standards, spherometer, planimeter, etc. Among the special apparatus are a steam engine, a gas



engine, electric motors of various patterns, a storage battery, a model Edison three-wire plant of about two hundred lights capacity, a full set of electrometers, galvanometers and rheostats. The mechanical appliances include two engine lathes and several small lathes, with benches and tools for working wood and metal, soldering and glass-working. The reference-books most frequently consulted are kept in the rooms of the department, ready for instant use.

In the large exhibition-room in the Geological Building the various collections in Natural History are displayed. Through the indefatigable perseverance of the late Dr. George H. Cook, who was especially interested in this side of the College equipment, very valuable collections have been secured, illustrating a wide range of subjects.

The collection in Lithology is quite complete, all the well-known rocks being illustrated. The rocks of Europe are particularly well shown. There is a very fine collection to illustrate Palæontology, which, while it well covers the whole subject, is specially rich in the fossils of this State. These two collections occupy the cases on the north side of the room. The large collection of shells, to illustrate Conchology, is displayed to good advantage in a series of table-cases in the gallery. The collection of Minerals occupies the cases on the south side of the room, and is quite full, though there are still many gaps in it. The varieties found in this State are well represented. One case at the east end of the room is filled with specimens of stone implements and ancient pottery, many of which have been found near New Brunswick, and which illustrate prehistoric

**Anthropology.** Two large central cases contain the Beck Collection of Minerals, and two others are filled with the rocks, clays and iron ores of New Jersey.

During the past two years an attempt has been made at a systematic arrangement of these collections. The minerals have been carefully and completely arranged and labeled in such a way that they can be conveniently studied. The rocks and fossils are now undergoing the same treatment, and will be in complete order before the end of the present year. It is intended to treat all the collections in a similar way, each label giving the donor's name whenever it can be obtained.

Donations are solicited from friends of the College to increase its collections, and to aid in the illustration of any of the subjects taught.

**THE KIRKPATRICK CHAPEL AND LIBRARY**—Erected 1872—is built of brownstone, in the French Gothic style of the Fourteenth Century. The auditorium is attractive, having a roof of opened timber, finished in black walnut and stained pine. On the walls hang numerous portraits of former officers and benefactors of the institution. It has a seating capacity for 350 persons.

Back of the Chapel is the large room designed for the President's classes, and adjoining is the assembly-room for the Trustees. Above these rooms is the Library.

#### LIBRARY.

The Library of the College, containing 30,000 volumes, is open for consultation during each term as follows: On

Mondays, Tuesdays, Wednesdays, Thursdays and Fridays, from 8 to 8:40 A. M., and from 12 M. to 12:50 P. M., and from 2 P. M. to 4:30 P. M.; on Saturdays from 9 A. M. to 12:50 P. M., and from 2 to 4:30 P. M. Students are allowed free access to the books, and are encouraged to become familiar with the proper methods of using a library for literary work.

In 1887, the late P. VANDERBILT SPADER, Esq., of New Brunswick (a member of the Class of 1849), gave to the College his personal library, valued at \$15,000, and consisting of about 5,000 books, among them many very valuable art volumes, and collections especially rich in State and local history, and in books of reference. By his will the College has received \$10,000, the income of which is to be expended for the maintenance and increase of the P. Vanderbilt Spader Library Gift.

By the gift of a permanent fund of \$1,000 from JAMES SUYDAM, Esq., supplemented by gifts from other sources, the library is supplied with the leading periodical publications in the various departments.

By the courtesy of the Theological Seminary of the Reformed Church, the Sage Library of more than 40,000 volumes is opened to the students of Rutgers for consultation; and under certain limitations books are drawn from it as well. It is within four minutes' walk of the College campus.

THE STATE LABORATORY of the New Jersey Agricultural Experiment Station was authorized by an act of the Legislature approved April 23d, 1888, and the building was well

advanced at the close of that year. It affords accommodations for the uses of the State and Agricultural College Stations, and by the courtesy of the Board of Managers of the State Station, who also constitute the State Board of Visitors to the Agricultural College, for the laboratory and class-room work of the students of the Agricultural College who are pursuing the regular and special courses in Agriculture, Chemistry and Biology.

The Agricultural and Biological departments have an equipment for purposes of instruction, consisting of—

(a) College Farm—equipped with modern farm buildings and arrangements, including improved farm implements, such as potato-diggers, seed-planters, and farm machinery, engine and boiler, cutters and crushers for fodder, hay-loaders and mowers. The dairy is equipped with the leading cream separators, Babcock tester, etc. The live stock includes examples of the five leading dairy breeds and several new crosses.

(b) Laboratories—separate rooms for Botany, for Entomology and for Zoology have been equipped with tables, accessory microscopic apparatus, histological reagents, microtomes, material for dissection, a dozen compound microscopes (Reichert's and Leitz's make), giving powers up to 800 diameters; also dissecting microscopes.

(c) Auzoux Models—illustrating the structure of Man, Horse, Bird, Reptile, Fish, Mollusc, Worm, Insects (Cockchafer, Silkworm larva and moth, Honey-bee and its work) and Plants (various flowers, fruits and fungi).

(d) Charts (including many of Leuckart's charts)—

illustrating the various parts of the living world; also many photographs and lantern slides.

(e) Cabinets—a collection of slides illustrating histology and the anatomy of minute animals, especially the insects; also a collection of 5,000 species of insects systematically arranged; also a collection of nearly 25,000 plants.

(f) Museums—a collection of stuffed animals and alcoholic specimens systematically arranged, 40 large boxes containing a collection of injurious insects and examples of their work, preparations of pathological plant specimens, a collection illustrating the biology of the oyster, its mess-mate and enemies, and a fine systematic collection in Conchology.

(g) Besides this equipment for direct instruction, the student has brought under his observation the equipment of the research laboratories of the experiment stations in working operation, such as the processes and instruments used in the study of milk, soils, fertilizers, bacteria, Mycology, micro-photography, insecticides, fungicides and other experiments relating to agriculture.

The facilities for teaching Chemistry are fully equal to the demands. The two laboratories furnish abundant room to the students, and are equipped with filter-pump, water-blast and tables for organic analyses, besides the ordinary facilities found in all laboratories. An adjoining room has been fitted up as a department library, in which are standard works of reference and the important chemical journals on file. The students are encouraged to spend all spare time in this room. The lecture-room is abundantly

lighted, and the table well fitted for experimental lectures. Special pieces of apparatus are constantly acquired, particularly to illustrate the more difficult points in the new developments of Chemistry, and for investigation. The collection to illustrate the lectures on Applied Chemistry is growing. Contributions are earnestly solicited.

WINANTS HALL — DORMITORY — Erected 1890. The building accommodates 100 students. The rooms are arranged in suites of a study and two sleeping-rooms, for two and three room-mates, and there are a few single rooms. Special attention is given to light, ventilation and sanitary appliances, and to the necessary quiet retirement and privacy of the students.

Ample provision is made for fire-escapes and other securities against accidents.

The entire building is heated by steam. Bath-rooms, lavatories and store-rooms are on each floor.

The large study-rooms are each furnished with two study tables and two chairs. The bed-rooms are each furnished with a solid oak set, consisting of bedstead (springs and mattress), bureau and washstand. The remaining furniture, such as sheets, pillows, pillow-cases, coverlets, towels, bowl and pitcher, etc., are to be supplied by the occupant. The schedule of prices for single rooms and suites of rooms includes heat and gas light.

In drawing for choice of rooms, the order of classes will be followed, precedence being given to the Seniors.

Rooms are to be taken for the full year. Rent is payable in advance, one-third at the beginning of each term.

Agreement to pay rent is for the entire suite, and must be signed by the student who draws it, or his guardian. Rooms may be occupied from the Monday preceding the opening of the College year to the Saturday following Commencement.

During the present year board is furnished by the matron at \$3.75 a week.

The drawing for choice of rooms for the year 1894-'95 will take place in the Registrar's office on Wednesday, June 6th, 1894, at 2:30 P. M.

SCHEDULE OF PRICES A WEEK OF ROOMS IN WINANTS  
HALL FOR 1894-'95.

The following schedule gives the weekly rental for each occupant of the respective rooms, and no more may occupy any suite than is indicated in parenthesis after the room numbers. One student occupying a double room, or two students occupying a room intended for three, will be charged the full rental for the suite:

- \$1.00**—11 (1), 15 (1), 16 (1), South, First Floor; 116 (1), 117 (1), 121 (3), North; 127 (3), South, Fourth Floor.
- \$1.25**—5 (3), North; 9 (2), 20 (2), South, First Floor; 118 (2), North; 132 (2), 135 (1), 136 (1), 137 (2), South, Fourth Floor.
- \$1.50**—70 (3), 76 (1), 77 (1), 81 (3), North; 102 (3), 113 (3), South, Third Floor.
- \$1.75**—23 (3), 29 (1), 30 (1), 34 (3), North; 55 (3), 66 (3), South, Second Floor; 108 (1), 109 (1), South, Third Floor; 124 (2), Middle; 140 (1), North, Fourth Floor.
- \$2.00**—61 (1), 62 (1), South, Second Floor; 87 (2), 90 (2), 96 (2), 97 (1), 99 (1), Middle, Third Floor.
- \$2.25**—2 (2), North; 12 (2), 17 (2), South, First Floor; 40 (2), 43 (2), Middle, Second Floor; 73 (2), 78 (2), North; 105 (2), 110 (2), South, Third Floor.
- \$2.50**—26 (2), 31 (2), North; 58 (2), 68 (2), South, Second Floor.

**THE ROBERT F. BALLANTINE GYMNASIUM.**—By the generosity of Robert F. Ballantine, Esq., of Newark, N. J., a Trustee of the College, a building has just been completed (1893), which affords unexcelled opportunities for physical instruction and exercise, and for military instruction and drill. This Gymnasium is situated on spacious grounds given to the College by another Trustee, James Neilson, Esq., of New Brunswick. The building is in two parts, the front portion being devoted to purposes of administration, and the rear, the gymnasium and drill-room proper. Ample offices are provided for the instructor in military science and the instructor in physical culture. The gymnasium and drill-room combined afford an unobstructed space one hundred feet by sixty in dimensions. The apparatus is of the most approved kind, and was chosen by the director of one of the best systems of physical instruction in the country. Suspended from the truss-roof is a running-track two hundred and eighty feet in length. Space is also afforded for the armory of the Scientific School. On the one side of the administration building is a large room for lockers, on the other side a room for military equipments. On the floor above apartments are provided suitable for all the uses incident to these purposes. In the basement are a swimming-tank, shower and needle baths, a ball cage and four bowling-alleys of perfect construction.

The building is a fine specimen of the colonial style of architecture.



**ATHLETICS.**—In order to secure for the students the benefits of out-of-door exercise, athletic sports are encouraged by the provision of adequate facilities. Rightly controlled, such sports have shown themselves beneficial both to the health of the students and to the quality of the work done, and are manifestly in the interest of good order. The more prominent athletes have been generally among the more earnest and successful students. The proper control of athletics has been secured by the organization of an incorporated athletic association, supported by the students and managed by a board of nine trustees, chiefly composed of resident alumni. In this board the Faculty has always had one or more representatives, and in this way a cordial co-operation has been steadily maintained between Faculty and students, avoiding the need for the exercise of direct authority.

**THE NEW ATHLETIC FIELD.**—By the generosity of James Neilson, Esq., of New Brunswick, an alumnus and Trustee of the College, there is now provided an athletic field, containing more than five acres and at a walking distance of about eight minutes from the College campus.

About five thousand dollars were spent in improving this field and providing proper accommodations. It is furnished with a commodious grand stand, with dressing-rooms and bath-rooms attached, and with everything to make it as nearly perfect as possible and to render it practically useful to the students.

## CATALOGUES.

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Former students of the College, whether graduates or not, are earnestly requested to keep the College informed of any change in their address or occupation, of works published, offices held, etc., both to facilitate the sending of the annual catalogue, and to furnish material for general catalogues, when printed. Catalogues of the College, etc., will be sent to alumni or friends of the College who send to the Registrar their addresses for this purpose.

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### RUTGERS COLLEGE PREPARATORY SCHOOL.

FOUNDED 1766.

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E. R. PAYSON, Ph.D., HEAD-MASTER.

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This School is under the direction of the Trustees of Rutgers College, and prepares boys for any American College or Scientific School.

It is completely equipped with suitable buildings and provided with a full corps of instructors.

For catalogue, address

E. R. PAYSON, Ph.D.,  
New Brunswick, N. J.

# REGISTER.

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## 1. SOPHOMORE ORATORS, CLASS OF 1895.

WILLIAM FRANK PARKER.

EUGENE BOBERT.

The following are named in the order of their appointment  
according to merit:

JOHN MULFORD ENRIGHT.  
CHARLES WESLEY GULICK.  
GEORGE JACOB JANEWAY.

GEORGE SULLIVAN LUDLOW.  
GEORGE F SCULL, JR.  
ALEXANDER BROKAW WAY.

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## 2. JUNIOR ORATORS, CLASS OF 1894.

JUNIOR EXHIBITION, JUNE 20, 1893.

PEITHESOPHIAN SOCIETY.

PHILOCLEAN SOCIETY.

WILLIAM EDGAR COMPTON.  
HOLMES VAN MATER DENNIS, JR.  
JOHN AUGUSTUS SABLES.  
JOHN HENRY THOMPSON.

CHARLES MORISON DIXON.  
EDGAR IRELAND MCCULLY.  
OTTO LEOPOLD FREDERICK MOHN.  
PHILIP COOK THOMAS.

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## 3. GRADUATING EXERCISES, CLASS OF 1893.

COMMENCEMENT, JUNE 21, 1893.

### HONORS.

ELLIS ROBERT WOODRUFF,	. . . . .	New Brunswick, N. J.
Valedictory, First Honor.		
ROBERT DODGE MERRILL,	. . . . .	New Brunswick, N. J.
Latin Salutatory, Second Honor.		
REGINALD BRIANT ALLEN,	. . . . .	Medford, N. J.
Philosophical Oration, Third Honor.		
EZRA FREDERICK SCATTERGOOD,	. . . . .	Columbus, N. J.
Scientific Oration, Fourth Honor.		
ELLIS ROBERT WOODRUFF,	. . . . .	New Brunswick, N. J.
Rhetorical Honor.		

## ORATIONS.

JAMES WALLACE HIGGINS, . . . . .	Roselle, N. J.
HENRY CHARLES CUSSLER, . . . . .	Catskill, N. Y.
FRANCIS BAIRD SANFORD, . . . . .	Warwick, N. Y.
RICHARD SWANN LULL, . . . . .	Trenton, N. J.

## MASTER'S ORATION.

WARREN REDCLIFFE SCHENCK, . . . . .	New Brunswick, N. J.
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## 4. DEGREES CONFERRED.

## Degree of Bachelor of Arts Conferred on Candidates in Course.

HENRY CHARLES CUSSLER,	FRANCIS BAIRD SANFORD,
PAUL WINFRED GEYER ( <i>post obit</i> ),	ALBERT HENRY SCHLIEDER,
HENRY HARRINGTON JANEWAY,	HOBART EARL STUDLEY,
FRANK MALVEN,	CHARLES EDWARD TINDELL,
ROBERT DODGE MERRILL,	ISAAC J. VAN HER,
ISAAC MESSLER,	FRANK M. VAN ORDEN,
LOUIS HOWELL METTLER,	ELLIS ROBERT WOODRUFF.

Degree of Bachelor of Arts Conferred *nunc pro tunc*.

REV. SAMUEL ISETT WOODBRIDGE, '76, . . . . .	Chinkiang, China.
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## Degree of Bachelor of Science Conferred on Candidates in Course.

REGINALD BRIANT ALLEN,	FRANK WILBUR REMSEN,
CHARLES STORR CHAMBERLAIN,	EZRA FREDERICK SCATTERGOOD,
HORACE MUNSON DECKER,	HARRY NOE SELVAGE,
PHILIP BEVIER HASBROUCK, JR.,	FRANK LINCOLN STEVENS,
JOSEPH ALLEN HEADLEY,	RICHARD STORME,
JAMES WALLACE HIGGINS,	VEERLAND TOMPKINS,
PHILIP LINDSLEY,	DAVID HIGGINS TOWNLEY,
CHARLES EDGAR LOVEJOY,	HENRY FRANCIS TWITCHELL,
RICHARD SWANN LULL,	CHARLES HENRY EARL UTTER ( <i>post obit</i> ),
WILLIAM GEORGE MCKNIGHT,	HERBERT METLAR WALDRON,
DANIEL HERBERT McLAURY,	HOWARD VAN DEVENTER WALDRON.

## Degree of Master of Arts Conferred.

ARTHUR J. COLLIER, '89,	WARREN REDCLIFFE SCHENCK, '90,
GABRIEL JACOB FOLMERE, '90,	ELIAS BROWN VAN ARSDALE, '90,
GERARD HALLOCK, '90,	JOHN S. VAN ORDEN, '90,
WARREN ACKERMAN MAYOU, '90,	WILLIAM DAVIS WARD, '90.

Degree of Master of Science Conferred.

HENRY RUFUS LANKFORD WORRALL, '84, GEORGE ANDREWS MITCHELL, '91,  
JOHN PHILLIPS STREET, '89, FRANK ROBERTSON VAN HORN, '92,  
LOUIS WILLIAM STOTESBURY, '90, JAMES ALBERT KELSEY.

Honorary Degrees Conferred.

A.M. ABRAHAM WILSON DURYEE, . . . New Durham, N. J.  
E.E. CHARLES LEAVITT EDGAR, . . . Boston, Mass.  
L.H.D. LEMUEL CARRINGTON MYGATT, A.M., . . . New York City.  
PH.D. EDGAR SOLOMON SHUMWAY, A.M., . . . New Brunswick, N. J.  
LL.D. REV. EDWARD BENTON COE, D.D., . . . New York City.  
LL.D. HENRY RUTGERS BALDWIN, M.D., . . . New Brunswick, N. J.  
D.D. REV. OREN ROOT, . . . Clinton, N. Y.  
D.D. REV. PAUL FREDERICK SUTPHEN, A.M., . . . Newark, N. J.  
D.D. REV. THEODORE WYCKOFF WELLS, A.M., . . . Paterson, N. J.  
D.D. REV. JOHN PRESTON SEARLE, A.M., . . . New Brunswick, N. J.  
D.D. REV. HENRY STOUT, A.M., . . . Nagasaki, Japan.  
D.D. REV. JAMES LE FEVRE, A.M., . . . Middlebush, N. J.

5. PRIZES AWARDED.

COMMENCEMENT, 1893.

SENIOR PRIZES.

Suydam Prize for Composition, . . . E. R. WOODRUFF.  
Suydam Prize for Natural Science, . . . R. S. LULL.  
Brodhead Classical Prize, . . . L. H. METTLER.  
Bradley Mathematical Prize, . . . E. F. SCATTERGOOD.  
Appleton Prize for Moral Philosophy, . . . FRANK MALVEN.  
Bowser Prize for Best Engineering Thesis, . . . J. W. HIGGINS.  
Bussing Prize for Extemporaneous Debate, 1st, . . . F. B. SANFORD.  
Bussing Prize for Extemporaneous Debate, 2d, . . . C. E. TINDELL.  
Class '76 Political Philosophy Prize, . . . PHILIP LINDSLEY.  
Van Doren Prize for Essay on Christian Missions, . . . H. C. CUSSLER.  
Van Vechten Prize for Essay on Foreign Missions, . . . E. R. WOODRUFF.  
Bradley Prize in Roman Law, . . . C. E. TINDELL.  
Class '66 Electrical Science Prize, . . . E. F. SCATTERGOOD.  
Delta Phi Senior Orator Prize, . . . E. R. WOODRUFF.

## JUNIOR PRIZES.

John Parker Winner Memorial Prize for Mental Philosophy, . . . . .	W. B. JUDD.
The Luther Laffin Memorial Prize in Metaphysics, . . . . .	{ F. J. BARNY. W. B. JUDD.
Perlee Junior Orator Prize, 1st, . . . . .	O. L. F. MOHN.
Perlee Junior Orator Prize, 2d, . . . . .	J. H. THOMPSON.

## SOPHOMORE PRIZES.

Myron W. Smith Memorial Prize for Declamation, 1st, . . . . .	W. F. PARKER.
Myron W. Smith Memorial Prize for Declamation, 2d, . . . . .	EUGENE BOGERT.
Hart English Literature Prize, . . . . .	C. A. WECKERLY.
Spader Prize for Modern History, 1st, . . . . .	J. M. ENRIGHT.
Spader Prize for Modern History, 2d, . . . . .	H. U. HART.

## FRESHMAN PRIZES.

Tunis Quick Grammar and Spelling Prize, . . . . .	G. S. HOBART.
Sloan Entrance Examination Prize, 1st, . . . . .	J. E. JENNINGS.
Sloan Entrance Examination Prize, 2d, . . . . .	E. C. McKEAG.
Barbour Prize in Speaking, 1st, . . . . .	I. N. ENYARD.
Barbour Prize in Speaking, 2d, . . . . .	F. A. KILMER.

## 6. CLASS-DAY EXERCISES.

## CHAPEL.

President, . . . . .	CHARLES E. TINDELL, New Brunswick, N. J.
Orator, . . . . .	LOUIS H. METTLER, East Millstone, N. J.
Poet, . . . . .	*PAUL W. GEYER, New York City.
Historian, . . . . .	HENRY F. TWITCHELL, Newark, N. J.
Presenter of Class Memorial, . . . . .	DAVID H. TOWNLEY, Elizabeth, N. J.
Prophet, . . . . .	ELLIS R. WOODRUFF, New Brunswick, N. J.
Address to Undergraduates, . . . . .	ISAAC J. VAN HEE, Pultneyville, N. Y.
Presenter of Mementos, . . . . .	FRANK MALVEN, Port Jervis, N. Y.

## CAMPUS.

Ivy Orator, . . . . .	FRANCIS B. SANFORD, Warwick, N. Y.
Ivy Planter, . . . . .	RICHARD STORMS, Pascack, N. J.
Ivy Odist, . . . . .	ROBERT D. MERRILL, New Brunswick, N. J.
Pipe Orator, . . . . .	DANIEL H. McLAURY, New Brunswick, N. J.
Address to President, . . . . .	HENRY C. CUSSLER, Catskill, N. Y.
Committee . . . . .	VREELAND TOMPKINS, Jersey City, N. J.
	CHARLES S. CHAMBERLAIN, Madanapalle, India.
	HENRY H. JANEWAY, New Brunswick, N. J.
	FRANK W. REMSEN, Blackwell's Mills, N. J.
	EZRA F. SCATTERGOOD, Columbus, N. J.

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\* Died March 22d, 1898.

7. RUTGERS CORPS CADETS.

COMMANDANT.

JOHN J. BRERETON,  
First Lieutenant, Twenty-fourth U. S. Infantry.

FIELD.

HOWARD DE MOTT, Major.

STAFF.

I. A. LEE, First Lieutenant and Adjutant.

C. F. BERGER, Sergeant-Major.

H. G. HARRIS, Quartermaster-Sergeant.

COMPANY A.

Captain, . . . J. V. N. DORE.  
First Lieutenant, J. J. YATES, JR.  
Second Lieutenant, W. S. MITCHELL.  
First Sergeant, . . G. F. SCULL, JR.

Sergeants, . . . { I. W. HOWELL.  
E. S. CONKLIN.  
F. W. ELLS.

Corporals, . . . { S. W. JONES.  
L. INGLIS.  
H. E. WHITE,

COMPANY B.

Captain, . . . M. WILLIAMS.  
First Lieutenant, D. HAND.

First Sergeant, . . R. S. PARSONS.

Sergeants, . . . { C. RUNYON, JR.  
H. S. HAMPTON.  
J. G. BLACKWELL.

Corporals, . . . { G. W. NUTTMAN.  
R. M. PIERSON.

COMPANY C.

Captain, . . . G. M. VAN DUZER.  
First Lieutenant, D. LAYTON.  
First Sergeant, . . E. L. HURLEY.

Sergeants, . . . { J. M. ENRIGHT.  
C. M. DENISE.  
A. B. WAY.

Corporals, . . . { C. W. BYRAM.  
G. VAN CLEVE.

COMPANY D.

Captain, . . . A. C. FOX.  
First Lieutenant, L. L. WETMORE.  
First Sergeant, . . W. V. B. VAN DYCK.

Sergeants, . . . { C. E. CONOVER.  
E. BOGERT.  
T. F. RUSSUM.

Corporals, . . . { C. A. POULSON.  
S. L. HIGGINS.

COLOR GUARD.

Color Sergeant, . . I. W. HOWELL      Privates, { W. B. ROSENCRANTZ.  
A. S. CLARK.

## DISTINGUISHED STUDENTS IN MILITARY DEPARTMENT.

In accordance with orders of the War Department, on the graduation of every class the names of such students as have shown special aptitude for military service will be reported to the Adjutant-General of the Army and to the Adjutant-General of New Jersey; and the names of the three most distinguished students in Military Science and Tactics will be inserted in the U. S. Army Register and published in general orders.

The names of the students of the Class of 1893 who were so reported to the Adjutant-General of the Army and the Adjutant-General of New Jersey, and whose names will appear in the Army Register for 1894, are:

HENRY F. TWITCHELL, Cadet Captain.  
 REGINALD B. ALLEN, Cadet Captain.  
 E. FREDERICK SCATTERGOOD, Cadet Captain.

## 8. ALUMNI ASSOCIATION.

## OFFICERS FOR THE YEAR 1893-'94.

President,	. . .	HON. G. A. HOBART, '68.
		HON. J. S. VAN CLEEF, '52.
Vice Presidents,	. . .	PROFESSOR J. C. SMOCK, '62.
		REV. J. P. SEARLE, D.D., '75.
		REV. C. SCHENCK, '79.
Secretary,	. . .	PROFESSOR A. A. TITSWORTH, '77.
Treasurer,	. . .	T. B. BOORAEM, '81.
Necrologist,	. . .	I. S. UPSON, '81.
Chief Inspector of Election of Alumni Trustees,		H. A. NEILSON, '78.
Assistant Inspectors,	. . .	D. D. WILLIAMSON, '70.
		J. E. ELMENDORF, '78.
Orator Primarius,	. . .	REV. J. B. THOMPSON, D.D., '51.
Orator Secundus,	. . .	REV. H. D. B. MULFORD, '81.



Standing Committee,	H. R. BALDWIN, M.D., LL.D., '49, Chairman.
	PROFESSOR A. A. TITSWORTH, '77, Sec'y, <i>ex officio</i> .
	T. B. BOORAE, '81, Treasurer, <i>ex officio</i> .
	REV. D. D. DEMAREST, D.D., LL.D., '87.
	REV. JAMES LE FEVRE, D.D., '54.
	REV. W. R. DURYEE, D.D., '56.
	J. N. CARPENDER, '66.
	J. B. KIRKPATRICK, '66.
	JAMES NEILSON, '66.
	D. D. WILLIAMSON, '70.
	H. A. NEILSON, '78.
	REV. P. T. POCKMAN, '75.
	J. S. VOORHEES, '76.
	PROFESSOR L. BEVIER, JR., '78.
	IRVING S. UPSON, '81.

9. PUBLIC MEETINGS AND LECTURES, 1892-'93.

Course of Twenty Lectures on the German Language and Literature by  
PROFESSOR CARL MEYER, D.D. October 6th, 1892-March 16th, 1893.

Saturday Morning Lectures.

Date.	Lecturer.	Subject.
Jan. 14.	PROFESSOR J. COOPER, D.D., D.C.L.,	"The Dionysiac Theatre at Athens" — describing the theatre, the play and the players.
Jan. 21.	PROFESSOR E. S. SHUMWAY, A.M.,	"The Parthenon."
Jan. 28.	PROFESSOR JOHN G. LANSING, D.D.,	"Arabic Architecture and Decoration."
Feb. 4.	PROFESSOR E. S. SHUMWAY, A.M.,	"The Buried Cities of Southern Italy."
Feb. 11.	REV. WILLIAM ELLIOT GRIFFIS, D.D.,	"Japanese Art."
March 11.	PROFESSOR R. W. PRENTISS, M.S.,	"World-making."
March 18.	PROFESSOR A. H. CHESTER, E.M., Ph.D., Sc.D.,	"How Rocks are Made."
March 25.	PROFESSOR F. C. VAN DYCK, Ph.D.,	"Inter-Action in the Universe."
April 15.	PROFESSOR JULIUS NELSON, Ph.D.,	"From Monad to Man."
April 22.	PROFESSOR JOHN B. SMITH, Sc.D.,	"The Insect World."
April 29.	PROFESSOR B. D. HALSTED, Sc.D.,	"From Big Trees to Bacteria."

## Phi Beta Kappa, Alpha of New Jersey. Established 1869.

<i>Date.</i>	<i>Paper by.</i>	<i>Subject.</i>
Nov. 7.	PROFESSOR ELIOT R. PAYSON, Ph.D.,	"Loyola and the Educational System of the Jesuits."
Dec. 5.	PROFESSOR CHARLES E. HART, D.D.,	"Scope and Function of Rhetoric and Composition."
Jan. 9.	PROFESSOR C. L. SPEYERS, Ph.B.,	"Energetics."
Feb. 6.	REV. JAMES F. RIGGS, D.D.,	"The Eastern Question."
March 6.	CHARLES H. VOORHEES, M.D.,	"The Comparative Effect, or the Immunity and Susceptibility of Animals to Vegetable and Other Poisons."
April 8.	PROFESSOR E. S. SHUMWAY, A.M.,	"The Logic of Law."
May 1.	PROFESSOR G. FISCHER, LL.D.,	"Bismarck's Development as a Statesman."
June 5.	PROFESSOR R. W. PRENTISS, M.S.,	"The Opposition of Marx in 1892."

## The New Jersey State Microscopical Society. Founded 1869.

<i>Date.</i>	<i>Paper by.</i>	<i>Subject.</i>
Nov. 28.	. . . . .	Study and Exhibition of Micro-photographic Apparatus
Jan. 28.	PROFESSOR B. D. HALSTED, Sc.D.,	"Inoculation of Anthracoses"
Feb. 27.	PROFESSOR JOHN B. SMITH, Sc.D.,	"Nervous System and Senses of Insects"
March 27.	HENRY R. BALDWIN, M.D.,	"Cholera"—with exhibition of the cholera bacillus.
April 24.	. . . . .	Exhibition of Slides by many members.
May 22.	A. V. N. BALDWIN, M.D.,	"Phthisis, or Consumption."

## The New Brunswick Historical Club. Founded 1870.

<i>Date.</i>	<i>Paper by.</i>	<i>Subject.</i>
Oct. 20.	PRESIDENT AUSTIN SCOTT, LL.D.,	"The Separate Rights of New Jersey in the Eighteenth Century."

<i>Date.</i>	<i>Paper by.</i>	<i>Subject.</i>
Dec. 15.	CHARLES D. DESHLER, Esq.,	"Recollections of an Old-Time Drug Clerk."
Jan. 19.	ROBERT L. HOAGLAND, Esq.,	"A Public Meeting in '49."
March 16.	REV. JOHN B. THOMPSON, D.D.,	"A Jersey Woman of the Eighteenth Century."
May 11.	HENRY R. BALDWIN, M.D.,	"The Delaware and Raritan Canal."

The New Brunswick Greek Club. Founded 1885.

<i>Date.</i>	<i>Reader.</i>	<i>Text.</i>
Oct. 14.	PROFESSOR LOUIS BEVIER, JR.,	The <i>Œdipus Rex</i> of Sophocles.
Nov. 18.	PROFESSOR JACOB COOPER, D.D.,	The <i>Œdipus Rex</i> of Sophocles.
Dec. 2.	MR. BYRON CUMMINGS, A.M.,	The <i>Œdipus Coloneus</i> of Sophocles.
Jan. 27.	MR. I. W. LOTT,	The <i>Œdipus Coloneus</i> of Sophocles.
Feb. 10.	PROFESSOR ELIOT R. PAYSON, Ph.D.,	The <i>Œdipus Coloneus</i> of Sophocles.
April 14.	REV. JAMES F. RIGGS, D.D.,	The <i>Œdipus Coloneus</i> of Sophocles.
April 28.	PROFESSOR E. S. SHUMWAY,	The <i>Antigone</i> of Sophocles.

The New Brunswick Astronomical Society. Founded 1892.

<i>Date.</i>	<i>Paper by.</i>	<i>Subject.</i>
Nov. 23.	MR. B. J. EDMONDS,	"The November Meteors"
	PROFESSOR R. W. PRENTISS, M.S.,	"Views of Mars."
Dec. 21.	REV. M. V. McDUFFIE,	"Biela's Comet."
	MRS. M. H. HUTTON,	"Nova Aurigæ."
	MR. H. SKIFFERT,	"Holmes' Comet, 1892."
	MISS M. M. STOUT,	"Sun Spots and Auroras."
Jan. 25.	MISS M. E. MERRILL,	"Temporary Stars."
	MR. SEAMAN MILLER,	"Review of Astronomical Journals for December, 1892."
	MR. H. SKIFFERT,	"Holmes' Comet, 1892."
Feb. 15.	MRS. M. H. HUTTON,	"Current Astronomical Journals."
	MR. B. J. EDMONDS,	"The Lick Observatory Telescope."

<i>Date.</i>	<i>Paper by.</i>	<i>Subject.</i>
March 22.	MRS. SEAMAN MILLER,	"Recent Observations of the Moon."
	MR. ASHER ATKINSON,	"Current Astronomical Journals."
	MR. C. E. POWELSON,	"The Paris Ten-foot Reflecting Telescope for 1900."
	PROFESSOR R. W. PRENTISS, M.S.,	"Photographs of Solar Phenomena."
April 19.	MISS M. M. STOUT,	"Current Astronomical Journals."
	MISS M. E. MERRILL,	"Fraunhofer."
	MR. H. C. PARKER,	"The Satellites of Jupiter."
June 8.	MR. B. J. EDMONDS,	"Current Astronomical Journals."
	MISS M. E. CHRISTOPHER,	"The Total Solar Eclipse of 1893."
	MR. HENRY SEIFFERT,	"Observations of the Planet Venus."

Extension Course of Twelve Lectures on Botany.

BY PROFESSOR BYRON D. HALSTED, Sc.D.

March 17.	The Seed ; its Origin, Structure and Uses.
March 24.	Stems and Roots.
March 31.	Leaves ; their Forms, Structures and Uses.
April 7.	Flowers ; their Parts, Forms and Functions.
April 14.	Fruits ; their Nature, Kinds and Uses.
April 28.	Flowerless Plants ; Ferns, Mosses, Algae and Fungi.
May 5.	} Plant Dissection.
May 12.	
May 19.	
May 26.	
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CATALOGUE  
OF  
RUTGERS COLLEGE  
AT  
NEW BRUNSWICK, N. J.



1894-'95

## CALENDAR.

## 1894.

SEPTEMBER 18, Tuesday: Examinations for admission.  
 SEPTEMBER 19, Wednesday: First Term begins. Recitations.  
 OCTOBER 6, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 30, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOV. 28-DEC. 3, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving  
 Recess.  
 DECEMBER 12-18, Wednesday-Tuesday: Examinations. First Term ends.  
 DEC. 18-JAN. 2, Tuesday-Wednesday, 8:40 A. M.: Christmas Vacation.

## 1895.

JANUARY 2, Wednesday: Second Term begins. Recitations.  
 JANUARY 31, Thursday: Day of Prayer for Colleges.  
 FEBRUARY 22, Friday: Washington's Birthday.  
 MARCH 5, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 MAR. 27-APR. 2, Wednesday-Tuesday: Examinations. Second Term ends.  
 APRIL 2-10, Tuesday-Wednesday, 8:40 A. M.: Spring Vacation.  
 APRIL 10, Wednesday: Third Term begins. Recitations.  
 MAY 20-22, Monday-Wednesday: Senior Final Examinations.  
 JUNE 10-14, Monday-Friday: Examinations of Three Lower Classes.  
 JUNE 14, Friday: Reading of Theses by Scientific Seniors, 2 P. M.  
 JUNE 14, 15, Friday, 10 A. M., and Saturday: Examinations for admission.  
 JUNE 16, Sunday: Baccalaureate Sermon, 7:30 P. M.  
 JUNE 17, Monday:  
     Class-Day Exercises, 3 P. M.  
     Junior Exhibition, 8 P. M.  
 JUNE 18, Tuesday:  
     Commencement Meeting of the Board of Trustees,  
     10:30 A. M.  
     Annual Meeting of the Alumni, 10:30 A. M.  
     Address before the Alumni, 12:30 P. M.  
     Alumni Dinner, 1:30 P. M.  
     129th ANNUAL COMMENCEMENT, 8 P. M.  
 JUNE 18-SEPT. 17, Wednesday-Tuesday: Long Vacation.  
 SEPTEMBER 17, Tuesday:  
     Examinations for admission, 10 A. M.  
     Examinations for removal of June Conditions, 10 A. M.  
 SEPTEMBER 18, Wednesday: First Term begins. Recitations.  
 OCTOBER 5, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 29, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOV. 27-DEC. 2, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving  
 Recess.  
 DECEMBER 16-20, Monday-Friday: Examinations. First Term ends.  
 DEC. 20-JAN. 6, Friday-Monday, 8:40 A. M.: Christmas Vacation.

## 1896.

JANUARY 6, Monday: Second Term begins. Recitations.



## TRUSTEES.

1894-95.

## EX-OFFICIO.

HIS EXCELLENCY GEORGE T. WERTS,	JERSEY CITY.
<i>Governor of the State of New Jersey.</i>	
HON. MERCER BEASLEY, LL.D.,	TRENTON.
<i>Chief Justice of the State of New Jersey.</i>	
HON. JOHN P. STOCKTON, LL.D.,	TRENTON.
<i>Attorney-General of the State of New Jersey.</i>	

## BY ELECTION.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
AUSTIN SCOTT, PH.D., LL.D., <i>President of the College.</i>	New Brunswick,	Nov. 25, 1890.
HON. JOHN HOPPER,	Paterson,	July 22, 1851.
MAURICE E. VIELE, Esq.,	Albany, N. Y.,	July 27, 1853.
REV. DAVID D. DEMAREST, D.D., LL.D.,	New Brunswick,	April 13, 1858.
HENRY L. JANEWAY, Esq.,	New Brunswick,	April 8, 1862.
REV. TALBOT W. CHAMBERS, D.D., LL.D.,	New York City, 70 West 36th St.	June 17, 1863.
REV. JOACHIM ELMENDORF, D.D.,	New York City, 35 Mt. Morris Ave.	April 14, 1869.
REV. PAUL D. VAN CLEEF, D.D.,	Jersey City,	April 14, 1869.
SAMUEL SLOAN, Esq.,	New York City, 26 Exchange Place.	June 20, 1871.
HON. GEORGE C. LUDLOW,	New Brunswick,	June 17, 1873.
HON. WILLIAM A. NEWELL, M.D., LL.D.,	Olympia, Wash.,	June 17, 1873.
REV. JOHN GASTON, D.D.,	Passaic,	June 20, 1876.
HON. HENRY W. BOOKSTAYER, LL.D.,	New York City, 14 East 67th St.	June 20, 1876.
ROBERT F. BALLANTINE, Esq.,	Newark,	June 20, 1876.
WILLIAM CLARK, Esq.,	Newark,	Oct. 29, 1878.
HON. GEORGE H. SHARPE,	Kingston, N. Y.,	March 4, 1879.
DAVID BINGHAM, Esq.,	East Orange,	March 7, 1882.
HENRY B. BALDWIN, M.D., LL.D.,	New Brunswick,	June 17, 1884.
FREDERICK FRELINGHUYSEN, Esq.,	Newark,	June 16, 1885.

## RUTGERS COLLEGE.

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
ERNEST J. MILLER, Esq.,	Albany, N. Y.,	June 16, 1886.
HON. JONATHAN DIXON, LL.D.,	Jersey City,	June 22, 1886.
JAMES NEILSON, Esq.,	New Brunswick,	June 22, 1886.
REV. RODERICK TERRY, D.D.,	New York City, 169 Madison Ave.	June 22, 1886.
TUNIS G. BERGEN, PH.D.,	Brooklyn, N. Y., 127 Pierrepont St.	Oct. 25, 1887.
REV. EDWARD B. COE, D.D., LL.D.,	New York City, 42 West 52d St.	Oct. 25, 1887.
*ELBERT B. MONROE, Esq.,	Tarrytown, N. Y.,	Oct. 25, 1887.
REV. JOHN B. DRURY, D.D.,	New Brunswick,	Oct. 25, 1887.
REV. JAMES LE FEVRE, D.D.,	Middlebush,	June 16, 1888.
FREDERICK J. COLLIER, Esq.,	Hudson, N. Y.,	June 16, 1891.
ALEXANDER T. VAN NEST, Esq.,	New York City, 81 West 37th St.	June 16, 1891.
PAUL COOK, Esq.,	Troy, N. Y.,	June 16, 1891.
DAVID MURRAY, PH.D., LL.D.,	New Brunswick,	March 1, 1892.
HON. GARRET D. W. VROOM,	Trenton,	June 21, 1892.
J. BAYARD KIRKPATRICK, Esq.,	New Brunswick,	June 21, 1892.
CHARLES T. VAN SANTVOORD, Esq.,	New York City, 38 West 35th St.	March 7, 1893.
ROBERT SCHELL, Esq.,	New York City, 33 West 56th St.	March 6, 1894.
GEORGE L. DANFORTH, Esq.,	Middleburgh, N. Y.,	June 19, 1894.

---

REV. DAVID D. DEMAREST, D.D., LL.D., . . . New Brunswick.  
*Secretary of the Board.*

FREDERICK FRELINGHUYSEN, Esq., . . . Newark.  
*Treasurer of the Board.*

---

## STATED MEETINGS OF THE BOARD.

Last Tuesday in October, at 2 o'clock P. M.

First Tuesday in March, at 2 o'clock P. M.

Commencement Day, at 10.30 o'clock A. M.

---

\* Died April 21st, 1894.

FACULTY.

---

AUSTIN SCOTT, PH.D., LL.D.,  
PRESIDENT,  
*VOORHEES Professor of History and Political Science.*  
24 Livingston Avenue.

REV. JACOB COOPER, DD., D.C.L.,  
COLLEGIATE CHURCH *Professor of Logic and Mental Philosophy.*  
108 George Street.

REV. CARL MEYER, D.D.,  
*Professor of Modern Languages and Literatures.*  
245 Easton Avenue.

FRANCIS CUYLER VAN DYCK, PH.D.,  
*Professor of Physics and Experimental Mechanics.*  
84 College Avenue.

EDWARD ALBERT BOWSER, C.E., LL.D.,  
*Professor of Mathematics and Engineering.*  
Queen's College.

REV. CHARLES EDWARD HART, D.D.,  
*Professor of the English Language and Literature.*  
33 Livingston Avenue.

LOUIS BEVIER, JR., PH.D.,  
*Professor of the Greek Language and Literature.*  
*Secretary of the Extension Department.*  
Bishop Place.

## RUTGERS COLLEGE.

EDGAR SOLOMON SHUMWAY, PH.D.,  
*Professor of the Latin Language and Literature.*  
211 Livingston Avenue.

ALFRED ALEXANDER TITSWORTH, M.S., C.E.,  
*Professor of Graphics and Mathematics.*  
590 George Street.

JULIUS NELSON, PH.D.,  
*Professor of Biology.*  
Adelaide Avenue, Highland Park.

BYRON DAVID HALSTED, Sc.D.,  
*Professor of Botany and Horticulture.*  
121 Livingston Avenue.

JOHN BERNHARD SMITH, Sc.D.,  
*Professor of Entomology.*  
45 Mine Street.

EDWARD BURNETT VOORHEES, A.M.,  
*Professor of Agriculture.*  
83 Easton Avenue.

REV. WILLIAM RANKIN DURYEE, D.D.,  
THEODORE FRELINGHUYSEN *Professor of Ethics, Evidences of Christianity*  
*and the English Bible.*  
17 Union Street.

ALBERT HUNTINGTON CHESTER, E.M., PH.D., Sc.D.,  
*Professor of Chemistry and Mineralogy.*  
*Curator of the Museum.*  
35 College Avenue.

JOHN JAMES BRERETON, 1st LIEUTENANT, 24TH U. S. INFANTRY,  
*Professor of Military Science and Tactics.*  
361 George Street.

JOHN CHARLES VAN DYKE, L.H.D.,  
*Professor of the History of Art.*  
Seminary Campus.

ROBERT WOODWORTH PRENTISS, M.S.,  
*Professor of Mathematics and Astronomy.*  
96 Easton Avenue.

ELIOT ROBERTSON PAYSON, PH.D.,  
*Professor of the History and Art of Teaching.*  
Hamilton Street.

EDWARD LUTHER STEVENSON, PH.D.,  
*Professor of History.*  
Seminary Place.

IRVING STRONG UPSON, A.M.,  
*Librarian and Registrar.*  
*Secretary of the Faculty.*  
118 Bayard Street.

CLARENCE LIVINGSTON SPEYERS, PH.B.,  
*Associate Professor of Chemistry.*  
361 George Street.

THOMAS LOGIE, PH.D.,  
*Associate Professor of Romance Languages.*  
60 College Avenue.

## RUTGERS COLLEGE.

EDWARD LIVINGSTON BARBOUR,

*Instructor in Elocution.*

210 Townsend Street.

WILLIAM EUGENE BREAZEALE, M.M.P.,

*Instructor in Mathematics*

133 Somerset Street.

EUGENE BETTS, M.S.,

*Instructor in Electricity and Physics.*

339 George Street.

WILLIAM SHIELDS MYERS, M.S., F.C.S.,

*Instructor in Chemistry.*

98 Easton Avenue.

CHARLES EVERETT ADAMS, A.M., M.D.,

*Instructor in Physical Culture.**Director of the Gymnasium.*

Gymnasium.

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The names of the Faculty, after that of the President, are arranged in groups. The Professors, according to seniority of appointment; the Librarian and Registrar; the Associate Professors and Instructors, in the order of their respective appointments.

## CATALOGUE OF STUDENTS

FOR THE YEAR BEGINNING SEPTEMBER 19, 1894.

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GRADUATE STUDENTS.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
PHILIP COOK THOMAS, A.B., Rutgers College. <i>Chemistry.</i>	New Brunswick,	93 Easton Ave.
JOHN HENRY THOMPSON, A.B., Rutgers College. <i>Mathematics.</i>	New Brunswick,	203 Redmond St.

## SENIOR CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
DAVID CAHAET,	Rahway,	Rahway.
FRANK CORNELL EATON,	Ellenville, N. Y.,	185 Winants Hall.
HENRY UNDERHILL HAET,	Neshanic,	Chi Phi House.
GEORGE JACOB JANEWAY,	New Brunswick,	192 Livingston Ave.
FREDERICK WILLIAM JOHANKNECHT,	Jamaica, N. Y.,	52 Hertzog Hall.
DWIGHT CHAPIN LEFFEERTS,	Brooklyn, N. Y.,	Zeta Psi House.
JOHN CONANT LOUD,	Brooklyn, N. Y.,	40 Winants Hall.
GEORGE SULLIVAN LUDLOW,	New Brunswick,	96 Bayard St.
THOMAS MORRIS STRONG,	Brooklyn, N. Y.,	Zeta Psi House.
WARREN CLARK VAN SLYKE,	Kingston, N. Y.,	40 Winants Hall.
HERMAN CHARLES WEBER,	Metropolitan, N. Y.,	52 Hertzog Hall.



## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JOHN GARRETTSON BLACKWELL,	Franklin Park,	Chi Phi House.
EUGENE BOGERT,	Harrington,	Delta U. House.
JOHN HENRY CARNES,	Jersey City,	124 Bayard St.
ABRAM SCHUYLER CLARK,	New Brunswick,	18 Kirkpatrick St.
EDGAR STANLEY CONKLIN,	Pekin, Ill.,	Delta U. House.
CHARLES E. CONOVER,	Manalapan,	College Farm.
CHARLES MEIRS DENISE,	Allentown,	Chi Psi Lodge.
FREDERICK WILLIAM ELLS,	Cranford,	Cranford.
JOHN MULFORD ENRIGHT,	Freehold,	Chi Psi Lodge.
AMOS HAINES FLAKE,	Medford,	114 Bayard St.
HENRY SEERLEY HAMPTON,	Millville,	Chi Psi Lodge.
EUGENE LINDSEY HURLEY,	Rahway,	Rahway.
CHARLES TOWNSEND LETSON,	Stelton,	Stelton.
ROBERT BALLANTINE LITTELL,	Setauket, N. Y.,	90 Winants Hall.
GABRIEL LUDLOW,	New Brunswick,	96 Bayard St.
WILLIAM FRANK PARKER,	New Brunswick,	164 Hamilton St.
FREDERICK HARRISON PIERSON, JR.,	Elizabeth,	Elizabeth.
CLARKSON RUNYON, JR.,	New Brunswick,	14 Union St.
THOMAS FRENCH RUSSUM,	Elizabeth,	Elizabeth.
IRVING EMMONS SALMON,	Boonton,	61 Winants Hall.
GEORGE FRANCIS SCULL, JR.,	Atlantic City,	118 Bayard St.
WILLIAM VAN BERGEN VAN DYCK,	New Brunswick,	84 College Ave.
ALEXANDER BROKAW WAY,	New Brunswick,	147 Bayard St.
CHARLES AUGUSTUS WECKERLY,	Atlantic City,	96 Albany St.

## JUNIOR CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
HENRY WELLS BRINK,	Katsbaan, N. Y.,	35 Hertzog Hall.
WILLARD CONGER,	New Brunswick,	83 Commercial Ave.
LANE COOPER,	New Brunswick,	108 George St.
ALFRED DRURY,	New Brunswick,	88 Livingston Ave.
JOHN LAWRENCE DUYER,	Newark,	Zeta Psi House.
GEORGE SMOCK HOBART,	Marlboro,	Chi Phi House.
ARTHUR FREDERICK JENNINGS,	Plainfield,	. Plainfield.
CHARLES GILBERT MALLERY,	Fishkill-on-Hudson, N. Y.,	25 Hertzog Hall.
EDWIN CORWIN MCKEAG,	New Brunswick,	233 Somerset St.
EDWARD JAY MEEKER,	Succasunna,	89 Hertzog Hall.
CHARLES SCUDDER POOL,	Somerville,	43 Winants Hall.
EDWARD TAYLOR RANDOLPH,	New Brunswick,	96 French St.
WILLIAM ADDISON RANNEY,	Cortland, N. Y.,	42 Guilden St.
FRANCIS EDWARD TILTON,	Holmdel,	42 Guilden St.
RUSSELL VAN ARSDALE,	Paterson,	17 Hertzog Hall.
JOHN BROWNLEE VOORHEES,	New Brunswick,	140 Hamilton St.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JOSEPH GEORGE BAIER,	New Brunswick,	193 Neilson St.
WESLEY WARNER BURDEN,	New York City,	Delta U. House.
WILLIAM RYALL BURTIS,	Freehold,	Zeta Psi House.
CLARENCE WOODRUFF BYRAM,	Morristown,	43 Winants Hall.
WILLIAM PIERSON CARTER,	Springfield,	Springfield.
WALTER KNICKERBOCKER CAVILEER,	Lower Bank,	107 Somerset St.
GEORGE DUNN CORNISH,	Gillette,	Chi Psi Lodge.
FREDERICK NEWTON CROWELL,	South Orange,	107 Somerset St.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
PAUL KIRK DOUGLAS,	Newark,	Newark
ERKURIES BEATTY FITHIAN,	Bridgeton,	Chi Phi House.
ALFRED COOKMAN GREGORY,	Trenton,	Trenton.
SPENCER LITTLEFIELD HIGGINS,	Roselle,	Delta U. House.
WILLIAM ROGER HOGG,	Toms River,	85 Albany St.
JOHN BENJAMIN HOLDING, JR.,	Bayonne City,	Bayonne City.
LESTER INGLIS,	Paterson,	Chi Psi Lodge.
GEORGE ELBERT JACKSON,	Brooklyn, N. Y.,	Zeta Psi House.
STANLY WOODRUFF JONES,	Rahway,	Rahway.
THOMAS HERBERT LETSON,	New Brunswick,	Voorhees Station.
HERBERT ARTHUR LUSTER,	Elizabeth,	Elizabeth.
FRANK CONOVER MANLEY,	New Brunswick,	12 Easton Ave.
FRANK LEAMING MANNING,	Red Bank,	20 Winants Hall.
HENRY MARELLI,	Paterson,	118 Winants Hall.
BARTHOLOMEW FRANCIS MONAGHAN,	Newark,	Newark.
GEORGE SHELDON MOWER,	Katsbaan, N. Y.,	11 Winants Hall.
JAMES BRYAN NOE,	Elizabeth,	Elizabeth.
GEORGE WINFIELD NUTTMAN,	Newark,	Chi Psi Lodge.
WILLIAM O'CONNOR,	Paterson,	24 Codwise Ave.
CULLEN WARNER PARMELEE,	Ocean Grove,	180 Winants Hall.
ROBERT MATTHEWS PIERSON,	Elizabeth,	Elizabeth.
JOHN FRANCIS POST, JR.,	Riverdale,	366 George St.
CHARLES ANSON POULSON,	Mendham,	180 Winants Hall.
IRVING LEE REED,	Mount Holly,	Chi Phi House.
ALLISON BURTON ROOME,	Butler,	Delta U. House.
WALDO BERTH ROSENCRANTZ,	Cranford,	Cranford.
HENRY DE WITT TREMPER,	Kingston, N. Y.,	Chi Psi Lodge.
GARRET VAN CLEVE,	Paterson,	Chi Psi Lodge.
HOWARD EDWARD VAN NESS,	Little Falls,	102 Winants Hall.
ROBERT BRADSHAW WHITAKER,	New Brunswick,	109 Winants Hall.
HOWARD EDMUND WHITE,	Trenton,	35 Albany St.
MILLER ROYAL WHITENACK,	Newark,	Newark.
JOHN ALFRED WILSON,	Dunellen,	114 Bayard street.
GUSTAV FREDERICK WITTIG,	New Brunswick,	16 Hardenbergh St.
HERBERT WYCKOFF,	Freehold,	20 Winants Hall.
JESSE FREDERICK ZABRISKIE,	Cherry Hill,	108 Winants Hall.

## SOPHOMORE CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
CLIFFORD PHILIP CASE,	New Brunswick,	142 Hamilton St.
WILLIAM GURLEY COOK,	Troy, N. Y.,	Bleecker Place.
FRANK HAMILTON DOBSON,	Bayonne City,	12 Winants Hall.
ALFRED ERICKSON,	New Brunswick,	Highland Park.
ANDREW WYCKOFF HAGEMAN,	Belleville,	39 Hertzog Hall.
JOSEPH AUGUSTUS JOHNSTON,	Westfield,	18 Hertzog Hall.
CHARLES MEEKS MASON,	Newark,	Newark.
ANDREW JOHN MEYER,	Albany, N. Y.,	12 Hertzog Hall.
LOUIS PROVOST PEEKE,	East Millstone,	37 Hertzog Hall.
JOSEPH SCUDDER,	New Brunswick,	Delta Phi House.
FRANCIS AUGUSTUS SKIBERT,	Garfield,	12 Hertzog Hall.
ANDREW JUDSON WALTER,	Tradesville, Pa.,	10 Hertzog Hall.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JAMES EDWARD ASHMEAD,	Pleasantville,	162 New St.
CHARLES FERDINAND BRENN,	Newark,	Newark.
GEORGE WASHINGTON BROWN,	Keyport,	106 Winants Hall.
JOHN NEILSON CARPENTER, JR.,	New Brunswick,	George St.
RAYMOND VAN ARSDALE CARPENTER,	Plainfield,	Hertzog Hall.
MORRISON CROSBY COLYER,	Newark,	Chi Phi Lodge.
DAVID ABRAHAM CONOVER,	New Brunswick,	Raritan Landing.
RALPH BREWSTER CORBIN,	Metuchen,	Delta Phi House.
JULIUS LE MOYNE DANNER, JR.,	Stillwater, Minn.,	87 Winants Hall.
GERARD JOHN DIEHL,	Passaic,	47 Hertzog Hall.
ISAAC NEVINS ENYARD,	New Brunswick,	819 George St.
GEORGE STANLEY FERGUSON,	Ocean Grove,	186 Winants Hall.
THOMAS EZEKIEL GRAVATT,	Clarksburgh,	College Farm.
HUGH HADDOW, JR.,	Newark,	Newark.
SAMUEL LAWRENCE HARDING,	Bridgeton,	Chi Phi House.
GEORGE EDDY HEATH,	New Brunswick,	99 Easton Ave.
CHARLES LIPPINCOTT HOOPES,	Haddonfield,	35 Easton Ave.
LEWIS GASTON LEARY,	Elizabeth,	Elizabeth.
SEYMOUR DE WITT LUDLUM,	Paterson,	358 George St.
JOHN MAHLON MILLS,	Morristown,	62 Winants Hall.
WILLIAM JAMES MORRISON, JR.,	Ridgefield Park,	105 Winants Hall.
GEORGE AUGUSTUS OSBORN,	Ocean Grove,	99 Winants Hall.
ARTHUR EDMUND OWEN,	Montclair,	87 Winants Hall.
RALPH BREWSTER PARROTT,	Schoharie, N. Y.,	Delta Phi House.
FLOYD YARD PARSONS,	Paterson,	Delta U. House.
HOWARD EGBERT REID,	Smithburgh,	College Farm
ALBERT ROSE RIGGS,	Milton,	Chi Phi House.
FREDERIC FREDERIC ROEBER,	Newark,	Newark.
EDGAR DE MOTT STREYKER,	Raritan,	90 Winants Hall.
WILLIAM SUTHERLAND,	Jersey City,	Delta Phi House.
JAMES EATON TORREY,	Montclair,	97 Winants Hall.
HENRY LUDWIG ULRICH,	Newark,	Newark.
PERCY VAN ORDEN,	Spring Valley, N. Y.,	Delta U. House.
JOHN STANLEY VERGA,	Camden,	98 Winants Hall.
WILFRED ROBERTS WOODWARD,	Trenton Junction,	218 Baldwin St.

## FRESHMAN CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
CHARLES FREDERICK BENJAMIN, JR.,	Fishkill, N. Y.,	48 Hertzog Hall.
JOHN BLACK,	Schodack Depot, N. Y.,	24 Hertzog Hall.
WILLIAM BURTON COLLIER,	Coxsackie, N. Y.,	Zeta Psi House.
HENRY GANSEVOORT COOKE, JR.,	Philadelphia, Pa.,	Zeta Psi House.
ROBERT WILLIAM COURTNEY,	New York City,	187 Winants Hall.
EDWARD DAWSON,	Walden, N. Y.,	20 Hertzog Hall.
FLOYD DECKER,	Newton,	20 Hertzog Hall.
HENRY RICHARD DE WITT,	Glasco, N. Y.,	Delta U. House.
FRANCIS KEESE WYNKOOP DRURY,	New Brunswick,	88 Livingston Ave.
GEORGE JULIUS GLINZ,	Philadelphia, Pa.,	35 Hertzog Hall.
GEORGE HARRINGTON,	Warsaw, N. Y.,	114 Bayard St.
JOHN ALBERT LIGGETT, JR.,	Rahway,	Rahway.
EDWARD GODFRED WALTER MEURY,	Brooklyn, N. Y.,	24 Hertzog Hall.
KING STICKLE ORAM,	Rockaway,	12 Winants Hall.
ALVIN CLAYTON OSTROM,	Kohala, Hawaii, H. I.,	Zeta Psi House.
WALTER HOFF SEELY,	New Brunswick,	208 Redmond St.
GEORGE TODD VAULES,	Rahway,	Rahway.
ROBERT THOMAS WILSON,	Bayonne,	48 Hertzog Hall.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
REGINALD SIDNEY BENNETT,	Tinton Falls,	58 Winants Hall.
BENJAMIN STEELMAN CHAMPION.	Ocean City,	114 Bayard St.
HORACE CODINGTON,	Martinsville,	6 French St.
JAMES COLLINS,	Freehold,	122 Bayard St.
CLINTON LLOYD DECKER,	Boonton,	110 Winants Hall.
JOHN FINLEY DRAKE,	Mendham,	184 Winants Hall.
GEORGE WILBER GARDNER,	Warsaw, N. Y.,	96 Paterson St.
THOMAS AQUINAS GERRETT,	New Brunswick,	41 Stone St.
RAYMOND GULICK,	Middletown,	144 Welton St.
JOHN BRANDON GUTHRIE,	Englewood,	Zeta Psi House.
EDMUND NEWELL HUFF,	Beverly,	78 Winants Hall.
GEORGE HUTCHINSON,	New Brunswick,	Three Mile Run.
WILLIAM EDWARD KELLY, JR.,	New Brunswick,	185 Welton St.
LOUIS ADOLF KEMPF,	Newark,	Delta U. House.
JACOB KOTINSKY,	Woodbine,	College Farm.
JACOB GOODALE LIPMAN,	Woodbine,	College Farm.
WILLIAM ALLEN MESSLER,	Allentown,	114 Bayard St.
RICHARD SEBASTIAN PEARSE,	Brooklyn, N. Y.,	45 Hertzog Hall.
ALBION EVERETT PREBLE,	Atlantic City,	114 Bayard St.
ROBERT BEALS FITZ RANDOLPH,	Plainfield,	Plainfield.
CORYDON MOTT RYNO,	Benton Harbor, Mich.,	52 Oliver St.
FREDERICK DE WITT SEARING,	Newark,	Newark.
CHARLES VERNON SMITH,	South Seaville,	184 Winants Hall.
LYMAN MILLER SMITH,	Dover,	110 Winants Hall.
LOUIS ULRICH STRASSBURGER,	New Brunswick,	12 Bayard St.
WILLIAM PITMAN CORBETT STRICK-		
LAND, JR.,	New Brunswick,	268 Suydam St.
WAYNE HUBERT THOMPSON,	New Brunswick,	208 Redmond St.
JOHN JEEVIS VAIL,	Rahway,	Rahway.
ELLIOTT EARLE VAN CLEEF,	New Brunswick,	94 Albany St.
HAYLOCK WALSER,	West Brighton, N. Y.,	Zeta Psi House.
EDMUND OLIVER WOOD,	Bordentown,	Bordentown.
JACOB WYCKOFF,	Tokyo, Japan,	224 Handy St.

## SPECIAL STUDENTS.

NOT CANDIDATES FOR A DEGREE.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms</i>
LOUIS DERBY AYRES, <i>Sciences.</i>	Bayonne City,	Chi Psi Lodge.
FREDERICK HARVEY BLODGETT, <i>Sciences.</i>	Washington, D. C.,	361 George St.
WILLARD PARKER CLARK, <i>Sciences.</i>	New Brunswick,	89 Bayard St.
HORACE JACKSON CRAIG, <i>Classics.</i>	Southampton, Pa.,	17 Winants Hall.
RICHARD ELTINGE, <i>Classics.</i>	Kingston, N. Y.,	37 Hertzog Hall.
WILSON WARREN FOWLER, <i>Sciences.</i>	New Brunswick,	450 George St.
FRANK KINGSLEY GRANT, <i>Sciences.</i>	Schoharie, N. Y.,	102 Winants Hall.
CHARLES WESLEY GULICK, <i>Classics.</i>	New Brunswick,	58 Oliver St.
IRWIN WHITE HOWELL, <i>Sciences.</i>	New Brunswick,	63 Paterson St.
ROBERT STEVENS PARSONS, <i>Sciences.</i>	Paterson,	Delta U. House.
JOHN PROVOST STOUT, <i>Classics.</i>	Manasquan,	Chi Psi Lodge.
CHESTER HARTRANFT TAPPING, <i>Sciences.</i>	New Brunswick,	57 Schureman St.

## SUMMARY.

	Classical.	Scientific.	Total.
Graduate Students.....	2	0	2
Seniors .....	11	24	35
Juniors .....	16	44	60
Sophomores.....	12	35	47
Freshmen .....	18	32	50
Special Students.....	4	8	12
Totals .....	63	143	206



## CLASSICAL DEPARTMENT.

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1. ADMISSION.

Examinations for admission to the College will be held on the Friday and Saturday preceding Commencement week, June 14th and 15th, 1895, beginning at 10 o'clock A. M. on Friday in the Registrar's office. Applicants for admission may also be examined on Tuesday, September 17th, at the same hour and place. Students are advised to be present for examination in June.

Examinations for admission are both written and oral.

Candidates for admission to advanced classes must sustain a satisfactory examination upon the subjects previously studied by the class which they propose to enter, as well as upon those required for admission into the Freshman Class. Under this regulation, students are admitted at any time during the collegiate year.

In exceptional cases students properly prepared may, by a special vote of the Faculty, be permitted to pursue select branches of study. Such students are required to take examinations and all work in Composition and Elocution with the class with which they study.

It is expected that students who present themselves will be prepared, by careful study and by reviews of their work, to pass successfully a thorough examination on the subjects which are required.

Only such students are admitted with conditions as are, in the opinion of the examiners, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class.

Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that all entrance conditions will be made up before the Thanksgiving recess.

#### ADMISSION ON CERTIFICATE.

From certain preparatory schools of approved standing students are admitted to the Freshman Class upon the full certificate of the Principal.

Upon the request of the Principal or Board of Education, the Faculty will appoint a committee to visit any school and to report upon its condition.

The schools which shall be approved by the Faculty upon the report of this committee shall be entitled, for a period of three years, to the privilege of admission upon full certificate for their students, to the Department for which they were prepared.

Blank forms of certificate for admission will be furnished to the Principal of an approved school upon application to the Registrar.

The certificate, when properly filled out, should be forwarded to the Registrar before the day fixed for the examination for admission in June of each year.

**SLOAN PRIZES FOR THE BEST ENTRANCE EXAMINATIONS,  
CLASSICAL COURSE.**

A FIRST PRIZE OF ONE HUNDRED DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills ; and a SECOND PRIZE OF FIFTY DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills, established in 1883 by Hon. Samuel Sloan, of New York, a member of the Board of Trustees, will be awarded to the students who shall be adjudged by the examiners to have passed the best examination among the applicants for admission to the Freshman Class, in 1895. The cash prizes will be awarded, one-half at matriculation and one-half at the end of the second term of the Freshman year. The scholarship funds will be applied to cancel term bills for tuition during the course, and will be forfeited if the student's general average on the work of the year falls below 80 on a scale of 100.

## REQUIREMENTS FOR ADMISSION.

The following, or a full equivalent, are the requirements for admission to the Freshman Class:

## 1. LATIN.

GRAMMAR, Allen-Greenough-Kittredge, Andrews-Stoddard-Preble, Gilder-sleeve-Lodge, or Harkness. The Roman system of pronunciation. Correctness in quantities is essential.

COMPOSITION, Jones, or forty-four lessons of Arnold-Mulholland. The candidate should have had constant exercise in writing Latin prose. Frequent oral exercises in rendering into Latin are earnestly recommended.

CÆSAR, four books of the *Gallie War*, or an equivalent amount of Cæsar's *Civil War*, or of Cornelius Nepos.

CICERO, six *Orations* (including the *Catilinarian*), and Sallust's *Catiline*, or if Sallust be omitted, nine *Orations*.

VERGIL, six books of the *Æneid*, with scansion, or five books of the *Æneid* with the *Eclogues*.

EQUIVALENTS may be substituted freely.

When the student elects to take the College examinations (instead of offering a preparatory school certificate), readiness and accuracy in "sight" translation, "sight" composition and "anticipatory" parsing will be allowed credits to offset quantitative deficiency.

HISTORY AND GEOGRAPHY; knowledge of the main facts of the Regal and Republican periods (Allen's *Short History of the Roman People* is approved); ability to map Italy, Gaul and Spain.

## 2. GREEK.

GREEK GRAMMAR entire; Goodwin's, or Hadley and Allen's.

XENOPHON'S ANABASIS, three books.

HOMER'S ILLAD, three books (omitting the catalogue of the ships), or HOMER'S ODYSSEY, three books. Particular care should be given to scansion.

SIGHT-READING. Students will be tested in reading easy Greek prose not included in the above.

PROSE COMPOSITION, Jones', or Collar and Daniell's, or Woodruff's.

GREEK HISTORY and Geography, Smith's *Smaller History of Greece*, or an equivalent, and a sufficient knowledge of Ancient Geography to enable the student to locate correctly the more important cities of Greece and the

Asiatic coast, and to draw a general outline of the coast, placing the chief islands of the Ægean Sea.

The above statements indicate the amount of work presupposed by the entrance examinations, but results are more important than the pages covered, and a free substitution of equivalents is allowed.

In preparing for the Greek course too much prominence cannot be given to a careful drill in composition. In no other way can the Grammar be so easily mastered, particularly the laws of accent.

In pronunciation the accent must be followed in prose, while preserving the correct quantities; but in poetry regard will be had only to quantity.

### 3. . MATHEMATICS.

ARITHMETIC complete, including the Metric System.

Fundamental operations; Common and Decimal Fractions; Percentage; Proportion; Square and Cube Root.

A practical knowledge of the Metric System of Weights and Measures is indispensable, since it is used in the class-room.

ALGEBRA, through Quadratic Equations, including Radicals; or the first fifteen chapters of Bowser's College Algebra, or an equivalent.

Attention is especially called to the *essential importance of a thorough preparation in the elements of Algebra*, on which subsequent success in Mathematics depends. The student should be thoroughly drilled in the fundamental operations of addition, subtraction, multiplication and division, in the use of negative and fractional exponents, in factoring and in involution and in evolution. He should be able to solve readily simple and quadratic equations. It is earnestly recommended that the student be required to solve numerous and varied examples, and to explain them verbally, with clearness, *giving the reasons for the successive steps*. It is desirable also to cultivate habits of neatness and order in the presentation of work on the black-board or paper.

PLANE GEOMETRY, four books of Bowser's, or an equivalent, *including Exercises*. Careful attention should be given to the *Exercises* in Geometry, as they greatly aid in acquiring readiness in geometrical reasoning.

### 4. THE ENGLISH BRANCHES.

HISTORY OF THE UNITED STATES (Johnston's History of the United States).

Candidates for admission are examined in the History of the United States, with special reference to the colonization of the several States, the forms of government which existed previous to the War for Independence, the causes and principal events of that war, the period of the Confederation, the establishment of the Federal Constitution, with the general history subsequent to that event.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

GEOGRAPHY.

ENGLISH GRAMMAR.

SPELLING.

A SHORT ENGLISH ESSAY is also required, to be written at the examination, on some theme drawn from books announced in advance: the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1893, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Shakespeare's *Macbeth* and *Twelfth Night*; Milton's *L'Allegro* and *Il Penseroso*; the *Sir Roger de Coverley Papers* in *The Spectator*; Macaulay's *Essays on Milton and Addison*; Irving's *Sketch Book*; Longfellow's *Evangeline*; Scott's *The Abbot*.

In 1896, students should be familiar with Shakespeare's *Twelfth Night*; the *Sir Roger de Coverley Papers* in *The Spectator*; Irving's *Sketch Book*; Scott's *The Abbot*; Webster's *First Bunker Hill Oration*; Macaulay's *Essay on Milton*; Longfellow's *Evangeline*.

5. MODERN LANGUAGES.

GERMAN —As good a knowledge of the grammar as is implied in the study of Whitney's *Brief German Grammar*, or Joyne-Meissner's *German Grammar for Schools and Colleges*, ability to pronounce correctly, and acquaintance with the commoner strong verbs.

## 2. COURSES OF STUDY.

The complete College course occupies four years, each year consisting of three terms.

All the studies of the Freshman and Sophomore years, and certain subjects of the Junior and Senior years, are prescribed for all candidates for a degree. These prescribed studies are intended to furnish the sound basis of a liberal education, whatever career or profession may be chosen.

The other studies of the Junior and Senior years are arranged in elective courses in accordance with a recent careful revision of the curriculum. These elective courses are designed not only to carry further the general training of the student in the liberal arts, but to fit him for the special occupation or profession which he proposes to follow.

The student is required to make his choice at the end of the Sophomore year, and the elective courses then chosen are to be pursued in connection with the prescribed studies throughout the last two years.

The following is a scheme of the studies of the prescribed and elective courses. While it is subject to change in details, it exhibits the amount of work required of students during the four years and indicates to candidates for advanced standing the equivalents which will be accepted from them :

## FRESHMAN CLASS.

*Exercises during each term of the year in Composition, Declamation and Elocution Speaking. Bible-Class (optional) and Sermon, Sunday morning.*

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. LATIN.—Cicero, De Amicitia; Oral and Written Composition.....	4
2. GREEK.—Homer's Odyssey; Prose Composition.....	4
3. MATHEMATICS.—Bowser's Algebra, from Chapter XVII.....	4
4. ENGLISH LITERATURE.—History of the English Language, Lounsbury; Chaucer. Private Reading: Lamb's Tales of Shakespeare, three plays of Shakespeare, first two books of Paradise Lost.....	2
5. PHYSIOLOGY.—Comparative Biology; Lectures; Physiology, Martin...	1
6. CIVICS.....	1

## SECOND TERM, THIRTEEN WEEKS.

1. LATIN.—Livy; Horace, Odes; Composition; Latin Synonyms.....	5
2. GREEK.—Selections from Herodotus and Xenophon; Prose Composition .....	5
3. MATHEMATICS.—Bowser's Algebra, completed; Bowser's Geometry.....	3
4. RHETORIC.—Clark; Lectures; Essays.....	2
5. ZOOLOGY.—Comparative Anatomy; Lectures; Physiology, Martin.....	1

## THIRD TERM, TEN WEEKS.

1. LATIN.—Horace; Odes, Epodes, Satires.....	4
2. GREEK.—Lysias; Prose Composition .....	4
3. MATHEMATICS.—Bowser's Geometry, completed.....	4
4. BOTANY.—Gray .....	2
5. ENGLISH LITERATURE.—History of English Literature; Paucocast's Representative English Literature.....	2



SOPHOMORE CLASS.

*Exercises throughout the year in Composition, Declamation and Extempore Speaking. Bible-Class (optional) and Sermon, Sunday morning.*

FIRST TERM.

Hours a week.

1. LATIN.—Pliny's Letters; Tacitus, Agricola.....	8
2. GREEK.—Selections from Plato; Prose Composition.....	8
3. INORGANIC CHEMISTRY.—Lectures, with Experiments, Remsen.....	4
4. MATHEMATICS.—Bowser's Plane and Spherical Trigonometry.....	8
5. GERMAN.—Joyne-Meissner's German Grammar; Storm's Immensee; Schiller's Ballads .....	8

SECOND TERM.

1. LATIN.—Tacitus, Selections from Annales and Historiæ .....	8
2. GREEK.—Demosthenes on the Crown; Æschines against Ctesiphon; Prose Composition .....	8
3. MATHEMATICS.—Bowser's Analytic Geometry.....	8
4. HISTORY.—Myers' Mediæval and Modern History .....	4
5. GERMAN.—Lessing's Minna von Barnhelm; reading at sight; Prose Composition.....	8

THIRD TERM.

1. LATIN.—Terence or Plautus; Catullus.....	8
2. GREEK —Aristophanes' Birds or Clouds; Prose Composition.....	8
3. MATHEMATICS.—Bowser's Analytic Geometry.....	8
4. HISTORY.—Myers' Mediæval and Modern History.....	4
5. GERMAN.—Goethe's Hermann and Dorothea; reading at sight; Prose Composition.....	8

## JUNIOR CLASS.

*Exercises throughout the year in Composition, Original Declamation and Extempore Speaking. Bible-Class (optional) and Sermon, Sunday morning.*

## PRESCRIBED STUDIES.

	FIRST TERM.	Hours a week.
1. FRENCH.—Whitney's Brief French Grammar; Lamartine's <i>Graziella</i> .....	3	
2. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Science; Schwegler's History of Philosophy, Stirling's Edition; Essays on Metaphysical Subjects.....	5	
8. PHYSICS.—Ganot; Lectures.....	2	
SECOND TERM.		
1. FRENCH.—Lamartine's <i>Graziella</i> ; Molière; Corneille; reading at sight.....	3	
2. LOGIC.—Fowler's Logic.....	2	
3. PHYSICS.—Ganot; Lectures.....	2	
4. ASTRONOMY.—Young's Elements.....	3	
THIRD TERM.		
1. FRENCH.—Classic French Prose; Prose Composition; reading at sight..	3	
2. PHYSICS.—Ganot; Lectures.....	2	
3. HISTORY OF CIVILIZATION.....	5	

## SENIOR CLASS.

*Exercises during the first and second terms in Composition, Original Declamation and Extempore Speaking. Bible-Class (optional) and Sermon, Sunday morning.*

## PRESCRIBED STUDIES.

	FIRST TERM.	
1. POLITICAL ECONOMY.—Walker and Perry; Lectures; Essay.....	4	
2. GEOLOGY.—Geikie.....	3	
8. FINE ARTS.—Lectures.....	1	
SECOND TERM.		
1. CONSTITUTIONAL LAW.—Cooley; Lectures.....	4	
2. ETHICS.—English Bible; Evidences of Christianity.....	3	
8. FINE ARTS.—Lectures.....	1	
THIRD TERM.		
1. INTERNATIONAL LAW.—Lectures.....	4	
2. PRACTICAL ETHICS.....	2	
3. MINERALOGY.....	2	
4. PEDAGOGY.—Lectures.....	1	

## JUNIOR AND SENIOR CLASSES.

## ELECTIVE STUDIES.

At the end of the Sophomore year choice is made of two elective courses, which are then pursued throughout the Junior and Senior years, in addition to the prescribed schedule of studies. Changes are not allowed after the beginning of the Junior year. The following are the elective courses offered :

- |                    |                 |                             |
|--------------------|-----------------|-----------------------------|
| 1. Latin.          | 4. German.      | 7. Chemistry- { a. Physics. |
| 2. Greek.          | 5. Mathematics. | 8. History.                 |
| 3. English-French. | 6. Biology.     | 9. Philosophy.              |
|                    |                 | b. Mineralogy, Geology.     |

Students choosing the English-French Course may pursue English during the Junior and Senior years, or English during the Junior year, with French during the Senior year.

The Course in Biology includes Zoology, Botany and Entomology.

Students choosing Chemistry may take Chemistry during the Junior year, with Physics during the Senior year, or Chemistry during the Junior year, with Geology and Mineralogy during the Senior year.

Students taking the Course in Philosophy may pursue Mental Philosophy throughout the Junior and Senior years, or Mental Philosophy throughout the Junior year, with Moral Philosophy throughout the Senior year.

The recitation schedule will be arranged so as to allow the following combinations of elective courses :

- |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 with 2. | 1 with 8. | 2 with 7. | 4 with 5. | 4 with 9. | 6 with 7. |
| 1 with 8. | 1 with 9. | 2 with 9. | 4 with 6. | 5 with 6. | 6 with 8. |
| 1 with 5. | 2 with 8. | 3 with 4. | 4 with 7. | 5 with 7. | 7 with 8. |
| 1 with 6. | 2 with 4. | 3 with 5. | 4 with 8. | 5 with 9. | 8 with 9. |
| 1 with 7. | 2 with 6. | 3 with 8. |           |           |           |

## ELECTIVE COURSES.

## 1. COURSE IN LATIN.

## JUNIOR YEAR.

Hours a week.

FIRST TERM.—Roman Rhetoric and Education; Quintilian, Tacitus, et al.....	3
SECOND TERM.—Roman Philosophy; Lucretius, Seneca, Cicero.....	3
THIRD TERM.—Early Latin; Bruns, <i>Fontes Iuris Romani</i> .....	3

## SENIOR YEAR.

FIRST TERM.—Roman Law; Krüger-Mommsen-Studemund, <i>Collectio Librorum Iuris Anteiustiniani</i> .....	4
SECOND TERM.—Roman Law; The Institutes of Justinian, edited as a Recension of the Institutes of Gaius by T. E. Holland .....	4
THIRD TERM.—Roman Law; The Digest; Introduction to Justinian's Digest, Roby; Selected Titles, Holland and Shadwell .....	4

## 2. COURSE IN GREEK.

## JUNIOR YEAR.

FIRST TERM.—Attic Orators, Selected Orations.....	3
SECOND TERM.—Thucydides ..	3
THIRD TERM.—Selections from the Lyric Poets .....	3

## SENIOR YEAR.

FIRST TERM.—Sophocles and Æschylus or Euripides .....	4
SECOND TERM.—Plato's Republic; Aristotle's Metaphysics.....	4
THIRD TERM.—Lucian .....	4

## 3. COURSE IN ENGLISH-FRENCH.

## JUNIOR YEAR.

FIRST TERM.—English Literary Criticism; Poetics .....	3
SECOND TERM.—The Elizabethan Poets, including Milton.....	3
THIRD TERM.—The English Drama; Shakespeare's Predecessors and Contemporary Dramatists; special studies in Shakespeare.....	3

## SENIOR YEAR.

FIRST TERM.—a. English —History of English Prose, Lectures; English Prose authors, Minto.....	4
b. French.—The works of Molière; Lectures on Molière and the period of French Literature contemporary with him; private reading of French authors; French Composition.....	4

Hours a week.

SECOND TERM.—a. English.—Eighteenth Century Poets, and Poets of the Romantic Revival.....	4
b. French.—The works of Victor Hugo; Lectures on Hugo and the French Literature of the Nineteenth Century; private reading; French Composition .....	4
THIRD TERM.—a. English.—Sweet's Anglo-Saxon Primer; Bright's Anglo-Saxon Reader.....	4
b. French.—The work of the second term continued.....	4

4 COURSE IN GERMAN.

JUNIOR YEAR.

FIRST TERM.—Wilhelm Tell, or another play of Schiller; German Prose Composition and Conversational German throughout the Junior and Senior years.....	8
SECOND TERM.—Faust, Part I., or another play of Goethe.....	8
THIRD TERM.—Minna von Barnhelm, or another play of Lessing.....	8

SENIOR YEAR.

FIRST TERM.—German Literature. Scherer, with lectures. The classroom work will be conducted entirely in German during the Senior year.....	4
SECOND TERM.—Middle High German; Grammar; The Niebelungen Lied.....	4
THIRD TERM.—Sight Reading of the German Lyric Poetry, with German Essays in Literary criticism.....	4

5. COURSE IN MATHEMATICS.

JUNIOR YEAR.

FIRST TERM.—Differential and Integral Calculus, Bowser.....	8
SECOND TERM.—Differential and Integral Calculus, Bowser.....	8
THIRD TERM.—Method of Least Squares; Introduction to Mathematical Astronomy .....	8

SENIOR YEAR.

FIRST TERM.—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures.....	4
SECOND TERM.—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures .....	4
THIRD TERM.—Higher Mathematics; Practical Astronomy; Observatory Work; Lectures.....	4

## 6. COURSE IN BIOLOGY.

## JUNIOR YEAR.

Hours a week.

FIRST TERM.—General Biology.....	3
SECOND TERM.—Invertebrate Zoology ; Vegetable Histology.....	3
THIRD TERM.—Botany and Entomology.....	3

## SENIOR YEAR.

FIRST TERM.—Systematic Entomology ; Vertebrate Anatomy.....	4
SECOND TERM.—Vegetable Physiology ; Mammalian Anatomy and Histology.....	4
THIRD TERM.—Botany and Entomology.....	4

7. COURSE IN CHEMISTRY—{ a. Physics.  
b. Mineralogy, Geology.

## JUNIOR YEAR.

FIRST TERM.—Experimental Chemistry ; Blowpipe Analysis.....	3
SECOND TERM.—Qualitative Analysis.....	3
THIRD TERM.—Qualitative Analysis, completed ; Quantitative Analysis..	3

## SENIOR YEAR.

FIRST TERM.—a. Physics —Mechanics ; Light ; Laboratory Practice.....	4
b. Mineralogy and Geology .....	4
SECOND TERM.—a. Physics —Heat ; Electricity ; Laboratory Practice... ..	4
b. Mineralogy and Geology .....	4
THIRD TERM.—a. Physics —Electricity ; Sound ; Laboratory Practice... ..	4
b. Mineralogy and Geology.....	4

## 8. COURSE IN HISTORY.

## JUNIOR YEAR.

FIRST TERM.—The Periods of the Renaissance and the Reformation.....	3
SECOND TERM.—The Periods of the Renaissance and the Reformation... ..	3
THIRD TERM.—English Constitutional History .....	3

## SENIOR YEAR.

FIRST TERM.—Critical Study of American History ; Reports upon current Historical and Economic Literature .....	4
SECOND TERM.—Critical Study of American History, continued ; Comparative Study of Modern Constitutions ; Reports upon current Historical and Economic Literature.....	4
THIRD TERM.—Comparative Study of Modern Constitutions ; Reports upon current Historical and Economic Literature.....	4

9. COURSE IN PHILOSOPHY.

(A choice will be made from time to time on the following basis.)

JUNIOR YEAR.

	Hours a week.
FIRST TERM.—Schwegler's History of Philosophy, Stirling's Edition; Porter's Elements of Psychology, continued; Aristotle's Metaphysics.....	3
SECOND TERM.—Fowler's Logic—Deductive; Schwegler's History of Philosophy; Aristotle's Metaphysics; Bradley's Appearance and Reality.....	3
THIRD TERM.—Davis' Theory of Thought; Schwegler's History of Philosophy; Hegel's Logic, Harris' translation; Aristotle's Metaphysics.....	3

SENIOR YEAR.

FIRST TERM.—a. Mental Philosophy.—Mansel's Metaphysics; Ueberweg's History of Logic and Logical Doctrines; Parts of Plato's Republic and Parmenides; Leibnitz's New Essays, English translation.....	4
b. Moral Philosophy.—Butler's Analogy.....	4
SECOND TERM.—a. Mental Philosophy.—Mansel's Metaphysics; Ueberweg's History of Logic and Logical Doctrines; Aristotle's Analytics; Bradley's Appearance and Reality.....	4
b. Moral Philosophy.—Calderwood's Hand-Book of Moral Philosophy.....	4
THIRD TERM.—a. Mental Philosophy.—Berkeley's Principles of Science; Jevons' Principles of Science; Aristotle's Topics.....	4
b. Moral Philosophy.—Calderwood's Hand-Book of Moral Philosophy.....	4

## DESCRIPTION OF THE COURSES OF STUDY.

## LATIN LANGUAGE AND LITERATURE.

In the prescribed work, the student is aided in mastering the language of the chief writers of the Republic and early Empire. In the elective work, early Latin and that of the later Empire are also studied.

The meaning of the word is fixed by inspecting its derivation and by comparing it with its synonymes and opposites. The sentence is studied analytically, with close attention to the value and disposition of phrases and clauses. Composition, partly systematic and partly based on the text read, is practiced in set written and oral exercises; and Latin questions, with extemporaneous answers in Latin, are employed according to the progress of the student, that by induction and practice he may gain a ready accuracy in the Latin tongue.

His attention is called to the differences in diction and syntax of the various authors, and, as he grows more familiar with the language, he is led to examine more critically the author's literary characteristics. The following representatives of the Republic and earlier Empire are read in the required work of six terms: Plautus or Terence, Cicero, Catullus, Livy, Horace, Tacitus and the younger Pliny.

The elective study is intended not only to add to the student's knowledge of the historical development of the language, but especially to broaden his comprehension of its literature. As he should now be able to appreciate the content of the literature as well as its form, the arrange-



ment of the elective work looks to the relative importance of the subject-matter of the text, with especial regard to the needs of future teachers and lawyers and of students of history. While other lines have sometimes been taken up, on the unanimous wish of the class, the arrangement given below is preferred and is designed to be a unit.

During the Junior year, the variety resulting from the single-term division is retained, but with the Senior year, the student's increase in power of continuous concentration on work of a more specializing nature is met by devoting the solid year to that text which represents "from Hadrian onwards the real strength of the Roman literature," as well as its most important original contribution to civilization.

#### JUNIOR YEAR.

##### I. Latin Literature on Rhetorical Theory and Criticism and on Education.

From Cicero's *Essays on Oratory*, Tacitus' *Dialogus de Oratoribus*, Horace's *Ars Poetica* and Quintilian's *Institutio Oratoria* one or two books are read by the whole class, others by individual members, with analyses and critical essays for the general information of the class.

##### II. Latin Literature on Philosophy.

Selections from Lucretius, Cicero's philosophical essays, and Seneca are treated as above. The text sets forth Roman views regarding the Divine Being, the immortality of the soul, the "higher law" of ethics, etc. An especial purpose is to interpret the Latin sources for the theology and ethics of the Stoic philosophy, "for three hundred years the healthiest and best influence in Roman society," and to prepare for intelligent views of its influence on Roman life and legislation.

**III. Early Latin.**

Selections from Bruns' *Fontes Iuris Romani* form the basis of the class-work, with individual study of other remains of early Latin, as accessible in Wordsworth's and Allen's selections. Attention is called to the peculiarities of the curial style. The subject-matter necessitates consideration of the early law.

**SENIOR YEAR.****IV. Roman Law.**

At first, antejustinianian text is translated and interpreted with a resumé of the historical development of the private law. Later, Justinian's redaction is studied, with reading of the Institutes and excerpts from the Digest, with several full titles. By following closely the language and order of the Institutes, supplemented by citations from the larger works, an attempt is made to catch the Roman way of looking at legal questions as well as to gain some appreciation of the clearness and strength of style of the great jurists, and of the peculiarities of Justinian's latinity. It is hoped, too, that the student may gain some conception of Rome's world-historic function as law-maker.

From time to time, students have formed groups under the general rule respecting extra work, and the instructor has supplemented the class-room teaching by private instruction. Among the subjects which have been taken up are Colloquial Latin, Roman Topography and Archæology, and the History of the Literature of Roman Law.

## GREEK LANGUAGE AND LITERATURE.

The Greek course is divided into two parts, the division being at the end of the Sophomore year. The first is prescribed for the entire Classical Section; the second is one of the electives.

The required course aims to introduce the student to some of the best work of the greatest writers. It is sufficient in quantity to enable him to master the grammatical structure of the language. This, with the acquirement of a good vocabulary, is the end held first of all in view. All should, in addition, be able to appreciate to some degree the strength and beauty of the Greek literature.

The course begins with the study of Homer as a continuation of the work done in the preparatory school. After the first term the attention is directed chiefly to the Attic prose of the fifth and fourth centuries before Christ. While the particular books read vary somewhat from year to year, there will not be much variation in the authors chosen, which are the following: Homer, Herodotus, Xenophon, Plato, Lysias, Demosthenes, Æschines and Aristophanes. Exercises in writing Greek are constantly required during these two years, based in part on special text-books, and in part on the texts read.

During this course promising students are encouraged to read privately in addition to the work assigned to the class, and are examined thereon, credit being duly given in the annual catalogue.

The elective course running through the Junior and Senior years is divided according to the number of terms into six studies, in each of which a separate field of litera-

ture is chosen. In each term the plan contemplates three features—first, lectures by the instructor; second, readings assigned to the class for regular recitation, and third, some individual task assigned to each one following the course for private study, on which he will be expected to report in the form of a thesis or paper before the end of each term, and will be examined.

I. The Attic Orators. Orations by various authors will be studied and analyzed, as well as the development of the literary type. Some one orator will be chosen as the center of study. The individual work will consist in part of abstracts and analyses of orations not read in class.

II. The Historians. At least one complete book of Thucydides will be read in class, and also some portions of Herodotus. The individual work will require readings and studies in the later historians as well.

III. The Lyric Poets. Besides reading from a number of poets, a careful study of the metrical form will be required, both for the proper appreciation of the lyrics themselves and to prepare the way for the easy understanding of the dramatic choruses. Metrical translations will be required from time to time.

IV. The Dramatists. At least two complete plays, one of Sophocles and one of Æschylus or Euripides, are read in class, and each member of the class will read privately at least one other. Some of the choral passages will be memorized.

V. The Philosophers. The class readings will be taken from Plato and Aristotle, and will be varied from year to year.

VI. The last term will be given to Lucian.

The elective course is not designed to make specialists, but to fit a man to specialize profitably if he so desires, and, in any case, to give the student an insight into all the great types of the Greek literature, and to enable him to gain some knowledge of the civil history and inner life of the people, and some conception of the influence of Greece on human thought and culture.

#### MODERN LANGUAGES.

**ENGLISH LANGUAGE AND LITERATURE.**—The course in English embraces the required study of the history of the English language and its literature, and the critical reading of English classics. A course of private reading is prescribed, upon which examinations are held. Essays in literary criticism are required during the Sophomore year. The elective study of the language and literature, including the study of Anglo-Saxon, is pursued during the Junior and Senior years.

**GERMAN.**—German is taught three hours a week throughout the Sophomore year as a required subject. During the first term, the grammar is the main object of study, with constant practice in the translation of illustrative sentences, both from German into English and from English into German. At the same time the student is required to learn, day by day, short vocabularies of commonly-used words, for conversational drill in the classroom. In the second term easy German prose is read, both in set lessons and at sight, and in the third, selections from standard authors for careful translation and for literary analysis. It is the aim of the required course in

German to give all the students a competent knowledge of the grammar, and a sufficiently large vocabulary to be able to read ordinary prose with ease, and to pursue further study by themselves without difficulty.

In the Junior and Senior years German is made one of the elective subjects, three hours a week throughout the Junior and four hours throughout the Senior year. The students who choose this subject are taught not only the reading knowledge of modern German, but are drilled in connected conversation and in the study of the older periods of the language from German text-books, the instruction throughout the Senior year being given entirely in the German language.

**FRENCH.**—French is taught three hours a week throughout the Junior year as a required study. A careful phonetic analysis of the pronunciation is insisted on, and the syntax is taught historically, presupposing a thorough acquaintance with the Latin grammar. In the second term a large amount of easy prose is read, with constant practice in translation both from French into English and from English into French. In the third term the harder authors are selected and the literary form is studied as well as the language itself. The required course is intended to give to all a practical acquaintance with the language, wide enough to enable them to read ordinary French prose at sight.

In the Senior year French forms a part of one of the elective courses, being taught four hours a week to such as choose to pursue it. The aim of the course is to make the

student acquainted with some of the best products of French literature during the seventeenth and nineteenth centuries.

#### MATHEMATICS AND ASTRONOMY.

**MATHEMATICS.**—Algebra and Geometry are required during the Freshman year. The course in Algebra introduces the student to the more abstract portions of the subject: Series, Mathematical Induction, the Method of Indeterminate Coefficients, the Binomial Theorem and the Theory of Equations. At the same time, practical training is given in the use of logarithms and in the solution of higher numerical equations.

In Geometry, the student is required not only to demonstrate theorems relating to the measurement of the circle, plane and solid angles and the solids of Geometry, but also to show how to apply them in original and practical problems to the mensuration of surfaces and solids.

Trigonometry and Analytic Geometry are taught during the Sophomore year, completing the required course in Mathematics. The Trigonometry studied includes trigonometric analysis and the solution of triangles, with applications to surveying and navigation. The course in Analytic Geometry treats of the representation of curves by means of equations. The properties of the line, circle and conic sections are studied by the use of Algebraic Analysis. This subject presents considerable difficulty to students not well grounded in Algebra, Geometry and Trigonometry.

Mathematics may be chosen as an elective study four

hours a week throughout the Junior and Senior years. Among the subjects offered in this course are the following:

Higher Algebra. Determinants.  
Theory of Equations.  
Analytic Geometry of Three Dimensions.  
Differential and Integral Calculus.  
Differential Equations.  
Analytic Mechanics.

**ASTRONOMY.**—General Astronomy is taught during the second term to all the members of the Junior Class. The daily recitations are supplemented by lectures on the new astronomy and modern methods and instruments of astronomical research. These lectures are illustrated by photographic lantern views obtained from the leading observatories of the world. Mathematical and Practical Astronomy may be pursued as an elective study in combination with Mathematics throughout the Junior and Senior years. The course then includes:

Introduction to Mathematical Astronomy.  
Theory and Use of Instruments.  
Method of Least Squares.  
Practical Work in the Schanck Observatory.

This course is designed to give the student training in the theory and use of instruments of precision, and to enable him from his own observations of the heavenly bodies to solve various important problems in the applications of Astronomy: the Determination of Time, Longitude, Latitude, Direction of the Meridian, etc. Considerable attention is paid to methods of calculation and to the reduction of observations.



## CHEMISTRY.

**INORGANIC CHEMISTRY** is taught from a text-book, and fully illustrated by lectures which demonstrate experimentally the points made in the book. The course covers the first term of Sophomore year, with exercises four hours each week. The intention is to give each student such a general knowledge of the science as every educated man should possess. Provision is made in an elective course for those who wish to pursue the subject further.

**ELECTIVE CHEMISTRY.**—In the Junior and Senior years, students may elect a course in Analytical Chemistry with Laboratory Practice and Lectures. The experimental studies in this department have proved both attractive and profitable to those intending to devote themselves to Law or Medicine, or to business pursuits, as well as to men who intend to teach or to pursue lines of work immediately connected with chemistry and its applications.

The pupil begins by making the experiments in Remsen's Chemistry, thus acquiring by actual experience a familiarity with chemical substances and chemical phenomena.

The study of Qualitative Analysis is next taken up. The student makes the tests, studies the reactions, and proceeds rapidly from the analysis of simple substances to more complex. The method here followed of keeping notes of every step affords the student valuable practice in the three divisions of experimental science—Experiment, Observation and Inference. The theory of analysis is explained in the lectures and recitations on the subject. In connection with this subject, Blowpipe Analysis is also taught.

Students able to finish the foregoing before the end of the College year, proceed to Quantitative Analysis. The instruction in this subject is not so much on detail as on general principles and construction and use of apparatus. Typical salts of known composition are analyzed gravimetrically and volumetrically, and then substances requiring for their determination carefully constructed apparatus.

#### MINERALOGY AND GEOLOGY.

A course of lectures in Mineralogy is given to the Senior Class, in which free use is made of the valuable mineral collections of the College, and of the private collection of the Professor in charge, which has been deposited in Geological Hall, by means of which the characteristics of the most important mineral species are illustrated and explained.

In the study of Geology a text-book is used, but each lesson is explained in advance by a short lecture, at which time suitable specimens are exhibited.

#### PHYSICS.

This subject is taught by lectures, and copious additions are made to the matter of the text-book. Each point is demonstrated as far as possible; and the relations of the subject to ordinary natural phenomena, the processes of the industrial arts, etc., are pointed out. Students are encouraged to use the apparatus under the direction of the Professor in charge, and are trained to distinguish the essential from the casual conditions of experiments, as well as to infer from scientific data no more than is certain and

warranted. The course begins with Mechanics and proceeds to Heat, Electricity, Sound and Light.

The apparatus is well fitted to illustrate all principles, and such additions are made to it as the industrial applications of science demand.

**ELECTIVE PHYSICS.**—During the Senior year of the Classical Course, Physics is an elective study.

The object of this elective is to furnish a sound, practical foundation to those who expect to engage in industrial pursuits, or in professions which demand acquaintance with the principles of Physics. The work consists of a course of laboratory exercises such as is set forth in Stewart and Gee's Practical Physics, besides many of the experiments described in the text-book used in the lecture course. The facilities of the Physical Laboratory have been greatly increased, so that all essentials are available to students.

#### BIOLOGY.

**PHYSIOLOGY AND ZOOLOGY.**—Work in these subjects is required during the first two terms of the Freshman year. The method of instruction is by lectures and quizzes, supplemented by demonstrations from charts, specimens, dissections, and Auzoux models. The aim is to give the student a bird's-eye view of the principles of Physiology, the structure of animals, and such an acquaintance with the facts of Zoology as shall enable him later to pursue psychological and geological studies with increased profit.

**GENERAL BIOLOGY.**—This is an elective subject in the Junior and Senior years. The distinctive studies of the

Course in Biology of the Scientific School must be chosen. The time required is three morning hours and two afternoons in the Junior year, and four morning hours and two afternoons in the Senior year. One-half of this time during the first two terms of each year will be pursued with the Professor of Biology. A detailed account of the studies of this portion of the course is given under the sub-head of General Biology for the Scientific School. The remaining time for the Biological Elective is divided between the Professors of Botany and of Entomology. The election of Biology includes Zoology, Botany and Entomology, the complete course extending through two years.

#### BOTANY.

Students in all courses take Botany two hours a week in the Spring term of the Freshman year. Gray's "Revised Lessons" is used as the text-book in descriptive Botany, and in connection with this, the students familiarize themselves with the methods of plant analysis. Each point considered is, as far as possible, illustrated by living specimens, either grown in the laboratory for purposes of dissection or collected in the fields and forests. Students are taught the methods of preparing and mounting specimens and are required to make collections of their own during the term.

The work of the Junior and Senior years, required in the Courses in Agriculture and Biology, is open for election by the students of the corresponding years in the classical course.

## HISTORY AND POLITICAL SCIENCE.

The study of History in the Classical Department is begun in the second term of the Sophomore year with the use of a text-book as a guide. The course is planned to cover European history, in outline, from the beginning of the Empire to the outbreak of the French Revolution. The progress of the greater movements in political and social development is traced, and emphasis is laid upon the formation and growth of modern States. In this required part of the course the method of instruction is to some extent topical, and aims to furnish information essential to good citizenship, to cultivate a habit of investigation, and to teach the student how to come to independent conclusions. Students are encouraged to use the library, are given direction in methods of historical work, and are taught the value of historical sources. A constant use of the historical atlas is required of the student throughout the prescribed courses.

**ELECTIVE HISTORY.**—Elective courses are open to Juniors and Seniors, offering facilities for advanced and systematic work in special periods of history, and for a study of the origin and development of political institutions. The courses include both European and American history.

The method of study is by lectures and topics. It aims to cultivate a spirit of original research and places emphasis upon library investigations. For students of the Senior Class a Seminary of History and Political Science is organized, in which papers embracing the results of independent original study are reported.

The following is an outline of the proposed elective courses:

**JUNIOR YEAR.**

**I. The Periods of the Renaissance and the Reformation.**

The work will consist chiefly of library investigations and critical examinations of reports growing out of these studies. The class will meet three times each week during the first and second terms.

**II. English Constitutional History.**

Instruction will be given by text-books, lectures and required readings on assigned topics. This is taken as an introduction to American History. Three times each week during the third term.

**SENIOR YEAR.**

**III. Colonial History of America, followed by the Constitutional and Political History of the United States.**

The methods of instruction are in general the same as in the Junior year. It is designed to be a critical study of American history. Attention is especially given to the growth of nationality and to the development of the Constitution. Three hours each week during the first and second terms.

**IV. Comparative Study of the Modern Constitutions.**

In this course the Constitutions of modern European States are studied and compared with that of the United States. A part of the second and the third term, three hours each week.

**V. Seminary of History and Political Science.**

This is designed for original investigations, and for reports upon the current historical and economic literature. One hour each week throughout the year.

**POLITICAL ECONOMY.**—The Senior Class, in both the Classical and Scientific Departments, receives instruction in the principles of Political Economy four hours weekly during the first term. In addition to the use of a text-book, lectures, formal and informal, are given, discussions are held, special topics are assigned to individuals for careful study, the results of which are read before the class, and essays are prepared by the class on some subject chosen by the writer from a number relating to this science.

**CONSTITUTIONAL LAW.**—The Senior Class in both departments pursues the study of Constitutional Law four hours weekly during the Winter term. Cooley's Principles of Constitutional Law is used as a text-book. Lectures are read by the President before the class on the historical development of the Constitution and some of the more important decisions of the Supreme Court are analyzed, for example those relating to the prohibition of State laws impairing the Obligation of Contracts, the Legal Tender Cases and others of importance and paramount significance. The aim is to ground all the students in a knowledge of the elements of Constitutional Law and to give a special preparation to those about to choose the profession of the law. This is particularly kept in view in assigning the subjects for the essays which accompany the other work of the term.

**INTERNATIONAL LAW.**—This subject is taken up the last term of the Senior year. Lectures are given by the President four hours weekly. The peculiar character of this

branch of law is dwelt upon, its development, the authorities and sources, and its present status.

**CIVICS.**—The President meets the Freshman Class of both departments one hour each week for their instruction by use of text-book and lecture in the elements of Civics and the duties of the citizen.

**MORAL PHILOSOPHY AND THE ENGLISH BIBLE.**

These studies are taken up during the Senior year. Those of the Classical section who so elect pursue the study of Butler's Analogy during the first term, and of Calderwood's Moral Philosophy through the second and third terms. The Classical section receive instruction by lectures on the English Bible during the second term.

Both sections of the Senior Class pursue the study of Practical Ethics during the third term.

**PHILOSOPHY AND LOGIC.**

**PHILOSOPHY.**—The Juniors are required to prepare five recitations a week in Porter's Elements of Intellectual Science during the first term. Fowler's and Jevons' Logics will be studied during the second term. Special courses in Philosophy will be given in Porter's Treatise on the Human Mind, Schweglar's History of Philosophy, Windelband's History of Philosophy, Fowler's and Ueberweg's Logics. In the Senior year courses in like manner will be given in Kant's Kritik, Porter's Human Mind, Descartes' Principia and Meditations and Hegel's Logic.



**ELECTIVE COURSE IN PHILOSOPHY AND LOGIC.**—This course extends through the Junior and Senior years. It is intended to give an outline of the History of Philosophy, from the earliest period of Greek Speculation to the present time. Together with special Histories of Philosophy, such as Ueberweg's, Erdmann's and Windelband's, there will be studied representative works in Speculation, such as the following: Aristotle, *Metaphysics* and *De Anima*; Plato's *Theætetus* and *Parmenides*; *Fragmenta Philosophorum Græcorum* in the original; Leibnitz's *Nouveaux Essais*; Descartes' *Principia* and *Method*; Kant's *Kritik*; Hume's *Essays*; Berkeley's *Principles of Knowledge*; Janet's *Final Causes*; Butler's *Analogy*; Jevons' *Principles of Science*; Bacon's *Novum Organum*; Herschell's *Discourse on Philosophy*; Whewell's *History of the Inductive Sciences*; Sir William Hamilton's *Lectures on Metaphysics*.

In Logic, the *Organon* of Aristotle in the original will be taught, together with Trendelenburg's *Elementa* and *Logische Untersuchungen*; Hegel's *Logic*, Harris' Translation; Ueberweg's *Logic*, Lindsay's Translation; Mill's, Bosanquet's, Bain's, Keynes', and Davis' *Logics*. Essays will be required of the students on the subjects studied, and syllabi of the lectures given.

In the various prizes which are offered there will be given especial inducement for advanced work. Classes will be formed of those students who offer themselves as candidates, under the general rule governing extra work which is to receive special recognition, and these will undergo a weekly review, on the books in which the prize examina-

tion will be held, and on the subjects assigned for the prize theses. These recitations will involve critical study, and be unsparing in rigor, with a view to insure thorough work, and elicit original research. These classes for special work will be at hours agreed upon between Professor and student, and additional to schedule recitations.

#### RHETORIC.

ELOCUTION.—The aim is to develop effective delivery in forms of expression. The scope of instruction embraces Physical Culture, Respiration, a Training of the Voice and a cultivation of the powers by which thought is analyzed and presented in synthetic expression.

RHETORIC.—In the department of Rhetoric, begun during the Freshman year, an effort is made to teach the principles of Composition, not as laid down in mechanical rules, but as springing from psychological laws and relations. Ideas presented in accordance with various mental requirements and influences are shown to contain the true philosophy of rational and effective discourse.

Illustrative references to the Masterpieces of Oratory, and to other forms of the best English Classical Literature, are freely given. Essays are required throughout the entire course.

EXTEMPORE SPEAKING.—The Bussing Prizes for excellence in extempore speaking, recently founded, are designed to cultivate the habit of presenting clearly, forcibly and accurately, and in a manner to convince an audience, the

facts and ideas a student has upon themes with which he may fairly be supposed to be somewhat conversant. The repeated competition for these prizes during the four years of the College course has already produced excellent effects.

#### THE FINE ARTS.

During the second term of this year there will be for the Seniors a course of lectures by Professor Van Dyke on the History of Painting, covering the ground from the earliest records of art in history to the present day. Van Dyke's "History of Painting" will be used as a text-book and all the lectures will be illustrated by lantern-slides and the casts, photographs and facsimiles of the Fine Arts collection.

#### HISTORY AND ART OF TEACHING.

Instruction is given by means of lectures during one term of the Senior year to the students of the Classical Department. Others who expect to teach, or who are interested in the subject, are allowed to attend the lectures.

The object of the course is to make the student acquainted with the most important educational theories and their place in history, and to introduce him to the study of the science and art of teaching. The principal educational classics are considered, and such practical work is done by reports and discussions as the time permits.

#### PHYSICAL TRAINING.

Exceptionally fine opportunities for Physical Training are afforded to all students by the new Robert F. Ballantine Gymnasium and the Neilson Field, both of which are elsewhere described.

At the beginning of his Freshman year each student is given a physical examination conducted upon the same plan as that now in use at the leading colleges, and a complete record made of his physical condition. This examination is repeated from time to time and thus affords valuable information concerning the growth and development of the individual. At the time of the examination, an anthropometric chart is made out, showing the relation of the individual to the normal standard in size, strength and symmetry. From the information thus obtained, cards are made out specifying the exercises most suitable for each case.

For the Classical section of the Sophomore and Freshman Classes attendance at gymnastic exercise is required for four half-hour periods weekly throughout the year. For these classes a graded course has been arranged. To the Freshmen are taught free exercises, exercises with Indian clubs, exercises upon the so-called "heavy" apparatus, and track and field athletics. The Sophomores use dumbbells, wands and the heavy apparatus, and also have instruction in athletics.

With all other students gymnasium attendance is optional. Classes are formed to suit the general convenience and a progressive course of instruction followed.

During the Winter term a class is formed from the two higher classes for instruction in fencing with foils and single-sticks.

Swimming is regularly taught during the Spring term.

## SCIENTIFIC DEPARTMENT.

## RUTGERS SCIENTIFIC SCHOOL.

BY ACT OF THE LEGISLATURE OF NEW JERSEY, APPROVED APRIL 4TH, 1864,  
 CONSTITUTED THE STATE COLLEGE FOR THE BENEFIT OF AGRICULTURE  
 AND THE MECHANIC ARTS, IN ACCORDANCE WITH THE LAW  
 OF THE UNITED STATES OF JULY 2D, 1862.

## BOARD OF VISITORS.

(APPOINTED BY THE GOVERNOR.)

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### 1. ADMISSION.

Every applicant for admission must be at least sixteen years of age, and must submit to the President proper testimonials of a good moral character. If an applicant for a Free State Scholarship he must also present to the President a certificate of appointment.

**EXAMINATIONS AT THE COLLEGE.**—Examinations for admission will be held on the Friday and Saturday preceding Commencement week, June 14th and 15th, 1895, beginning at 10 o'clock A. M. on Friday, in the Registrar's office. Applicants may also be examined on Tuesday, September 17th, at the same hour and place. Students are advised to be present for examination in June.

**STATE COMPETITIVE EXAMINATIONS.**—Students will also be admitted who pass the State competitive examinations, which will be held in the Court House of each county on Saturday, June 1st, 1895. For the requirements of the State law see page 58.

Only such students are admitted with conditions as are, in the opinion of the Faculty, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class. Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that all entrance conditions will be made up before the Thanksgiving recess.

**CERTIFICATES.**—From certain preparatory schools of established reputation students are admitted without examination upon the Principal's certificate that they have completed the required amount of work and are prepared to enter College. Blanks for such certificates will be furnished upon application. See page 20.

**ADVANCED STANDING.**—Students may enter advanced classes either at the beginning of the College year or at other times, if they sustain a satisfactory examination both on the preliminary studies and on those already passed over by the class which they propose to enter. Full equivalents will be accepted.

**SPECIAL STUDENTS.**—In exceptional cases students properly prepared for admission to the Freshman Class may, by special vote of the Faculty, be permitted to pursue select branches of study. Such students are required to take examinations, all work in Composition and Elocution and Military Drill with the class with which they have studied.

## FREE SCHOLARSHIPS.

STATE SCHOLARSHIPS, ACT OF 1864.—Under this law, a certain number of students from the State of New Jersey are received into this department of the College, and educated free of expense for tuition. These students are admitted to free scholarships on the recommendation of the Superintendent of Schools in each county after passing the required examinations. The scholarships provided by the Act of 1864 are distributed among the counties in proportion to their population, as follows:

ATLANTIC, . . . . .	1	MIDDLESEX, . . . . .	2
BERGEN, . . . . .	1	MONMOUTH, . . . . .	2
BURLINGTON, . . . . .	3	MORRIS, . . . . .	2
CAMDEN, . . . . .	2	OCEAN, . . . . .	1
CAPE MAY, . . . . .	1	PASSAIC, . . . . .	2
CUMBERLAND, . . . . .	1	SALEM, . . . . .	1
ESSEX, . . . . .	6	SOMERSET, . . . . .	1
GLOUCESTER, . . . . .	1	SUSSEX, . . . . .	1
HUDSON, . . . . .	6	UNION, . . . . .	2
HUNTERDON, . . . . .	1	WARREN, . . . . .	1
MERCER, . . . . .	2		<hr/> 40

SCHOLARSHIPS-AT-LARGE.—In June, 1888, the Trustees of the College provided ten additional free State scholarships.

STATE SCHOLARSHIPS, ACT OF 1890.—By a law passed March 31st, 1890, a number of free scholarships, one for each assembly district for each year, is established and offered to students in all parts of the State. The candidates for these scholarships are selected as follows: A competitive examination, under the direction of the City



Superintendents and the County Superintendent of Education in each county, shall be held at the County Court House in each county of the State, upon the first Saturday in June in each year. If several candidates for appointment pass the examination from the same assembly district, all who are suitably qualified shall receive appointment to such free scholarships, excess from certain assembly districts being counterbalanced by vacancies in other assembly districts, provided only that the entire number of appointees shall not exceed the entire number of Free Scholarships created by the State.

Letters of inquiry to the President, or to the Registrar, will receive careful attention.

## REQUIREMENTS FOR ADMISSION.

The following are the subjects in which those who wish to enter the Freshman Class of the Scientific Department are examined. Since all are such as can be acquired in our best common schools, it is insisted that the preparation in them shall be thorough and complete. The general regulations as to conditions and their removal will be the same as those which apply to the Classical Course, and may be found on page 20.

## I. MATHEMATICS.

**ARITHMETIC.**—Fundamental Operations; Common and Decimal Fractions; Denominate Numbers, including the Metric System; Percentage, including Interest and Discount; Proportion; Square and Cube Root.

*In preparing the student for this course, it is recommended that he be drilled thoroughly in Arithmetic, as a clear understanding of its simple elementary and practical principles is essential to a good Mathematician.*

**ALGEBRA** through Arithmetic, Geometric and Harmonic Progressions, or the first seventeen chapters of Bowser's College Algebra.

His preparation in Algebra should be *very thorough*. In addition to understanding the PRINCIPLES of the science he must fix them in his memory, and learn their bearing and utility, and for this reason he should pay great attention to the solution of practical examples. What is needed is ability to solve ordinary examples with facility and to explain them thoroughly.

Attention is specially called to the solution of Simultaneous Quadratic Equations, and of Equations of Higher Degrees than the Second, which may be reduced to the quadratic form, and then solved by the methods of solving quadratics.

The student should form the habit of arranging his work, whether on the blackboard or on paper, in a neat and orderly manner.

**GEOMETRY.**—The *whole* of Plane and Solid Geometry.

## 2. THE ENGLISH BRANCHES.

ENGLISH GRAMMAR—including Spelling.

A short ENGLISH ESSAY is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1895, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Shakespeare's *Macbeth* and *Twelfth Night*; Milton's *L'Allegro* and *Il Penseroso*; the *Str Roger de Coverley Papers* in *The Spectator*; Macaulay's *Essays on Milton and Addison*; Irving's *Sketch Book*; Longfellow's *Evangeline*; Scott's *The Abbot*.

In 1896, students should be familiar with Shakespeare's *Twelfth Night*; the *Str Roger de Coverley Papers* in *The Spectator*; Irving's *Sketch Book*; Scott's *The Abbot*; Webster's *First Bunker Hill Oration*; Macaulay's *Essay on Milton*; Longfellow's *Evangeline*.

DESCRIPTIVE GEOGRAPHY.

PHYSICAL GEOGRAPHY.

HISTORY OF THE UNITED STATES.—Johnston's *History of the United States*, or its equivalent.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

## 3. SCIENCE.

PHYSICS.—Students are required to show satisfactory acquaintance with Wells' or Cooley's *Natural Philosophy*, or Peck's *Ganot's Physics*.

CHEMISTRY.—Such knowledge of Chemistry as may be obtained from a thorough study of Ramsen's, Cooley's or Steele's *Chemistry* complete. Ramsen's *Elements of Chemistry* is recommended, because Ramsen's text-books are used during the course.

## 2. COURSES OF STUDY.

During the first year the studies of the full courses are the same, and are designed to furnish a suitable introduction to the pursuit of the higher branches in either course.

The elements of Agriculture, of Biology and of Botany are taught during the first, second and third terms respectively. Mathematics (Algebra, Trigonometry and Surveying), Draughting, English and French are taught throughout the year.

At the end of the first year students elect to pursue one of the full courses, and for the remaining three years their studies are directed with particular reference to the choice made. Some studies which go to the equipment of the intelligent citizen, whatever his occupation, such as History, English Literature, Political Economy, Practical Ethics, Astronomy and others, are interspersed throughout the entire four years, in order that students may not only acquire a thorough preparation for their special pursuits in life, but may at the same time receive a liberal training which will fit them to discharge wisely and usefully the duties of good citizenship.

Five distinct courses of study are included in the schedule which follows :

- I. A COURSE IN AGRICULTURE.
- II. A COURSE IN CIVIL ENGINEERING AND MECHANICS.
- III. A COURSE IN CHEMISTRY.
- IV. A COURSE IN ELECTRICITY.
- V. A COURSE IN BIOLOGY.

In the following schedule the Arabic numerals in light-faced type indicate the number of morning hours each week ; those in bold-faced type the number of afternoon hours. Exercises throughout the four years in Composition, Declamation and Extempore Speaking. Bible Class (optional) and Sermon each Sunday morning. Drill twice a week.

## FRESHMAN CLASS.

*Uniform Schedule for all Scientific Courses.*

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. FRENCH.—Whitney's Practical French Grammar, Part I.; Halévy's L'Abbé Constantin .....	5
2. MATHEMATICS.—Bowser's Algebra, completed.....	5
3. PRINCIPLES OF AGRICULTURE.—Voorhees.....	2
4. RHETORIC.—Clark; Lectures; Essays.....	2
5. ENGLISH LITERATURE.—History of the Language, Lounsbury; Private Reading; Six Plays of Shakespeare; First Two Books of Paradise Lost.....	1
6. CIVICS.....	1
7. DRAUGHTING.—Practice in Use of Instruments; Geometrical Problems and Applications.....	4

## SECOND TERM, THIRTEEN WEEKS.

1. FRENCH.—Grammar; Halévy's L'Abbé Constantin; reading at sight..	5
2. MATHEMATICS.—Bowser's Trigonometry, Plane and Spherical .....	5
3. ZOOLOGY.....	2
4. ENGLISH LITERATURE.—Pancoast's English Literature.....	4
5. DRAUGHTING.—Projections.....	4

## THIRD TERM, TEN WEEKS.

1. FRENCH.—A. de Vigny, Cinq-Mars; Lamartine, Graziella .....	5
2. MATHEMATICS.—Surveying. Carhart.....	5
3. BOTANY.—Gray's Revised Lessons.....	2
4. ENGLISH LITERATURE.—Pancoast's Representative English Literature.....	4
5. DRAUGHTING.—Free-hand Drawing and Perspective.....	4

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Agriculture, Course in  
Chemistry, and Course in Biology.*

## FIRST TERM.

Hours a week.

1. EXPERIMENTAL CHEMISTRY.—Remsen (first two months).....	} 5
2. BLOWPIPE ANALYSIS.—Landauer; Lectures (last month of term)....	
3. CHEMISTRY.—Remsen; Lectures, with Experiments.....	4
4. PHYSICS.—Ganot; Lectures.....	3
5. GERMAN.—Whitney's Brief German Grammar; Andersen's Märchen..	3
6. ENGLISH LITERATURE.—English Authors.....	1
7. CHEMICAL LABORATORY PRACTICE.—Experimental Chemistry and Blowpipe Analysis.....	9

## SECOND TERM.

1. QUALITATIVE ANALYSIS.—Ellot-Storer; Fresenius; Lectures.....	5
2. CHEMISTRY.—Remsen; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—Andersen's Märchen; Haupt's Das Kalte Herz.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9

## THIRD TERM.

1. QUALITATIVE ANALYSIS.—Ellot-Storer; Fresenius; Lectures.....	5
2. CHEMISTRY.—Organic Chemistry.—Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—German Science Reader, by Gove.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Civil Engineering and  
Mechanics and Course in Electricity.*

## FIRST TERM.

Hours a week.

1. DESCRIPTIVE GEOMETRY.—Church.....	5
2. CHEMISTRY.—Remsen; Lectures, with Experiments.....	4
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—Whitney's Brief German Grammar; Andersen's Märchen..	3
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Lettering.....	4

## SECOND TERM.

1. DESCRIPTIVE GEOMETRY.—Church, completed .....	} 5
2. ANALYTIC GEOMETRY.—Bowser .....	
3. CHEMISTRY.—Remsen; Lectures, with Experiments.....	3
4. PHYSICS.—Ganot; Lectures.....	3
5. GERMAN.—Andersen's Märchen and Haupt's Das Kalte Herz.....	4
6. ENGLISH LITERATURE.—English Authors .....	1
7. DRAUGHTING.—Projections; Intersections and Development of Sur- faces, etc.....	4

## THIRD TERM.

1. ANALYTIC GEOMETRY.—Bowser, continued.....	5
2. CHEMISTRY.—Organic Chemistry; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—German Science Reader, by Gove.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Shades and Shadows; Linear Perspective, etc.....	4

## JUNIOR CLASS.

*Schedule for Course in Agriculture.*

FIRST TERM.		Hours a week.
1. AGRICULTURE.—Farm Economy.....	3+3	8
2. GENERAL BIOLOGY.....	2	2
3. ELEMENTS OF MECHANISM.....	2	2
4. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....	2	2
5. HISTORY.—Myers' Mediaeval and Modern History.....	6	6
6. MILITARY SCIENCE.....	1	1
7. BIOLOGICAL LABORATORY PRACTICE.....	6	6
SECOND TERM.		
1. AGRICULTURE.—Manures and Fertilizers.....	3	3
2. ANATOMY OF INVERTEBRATES; VEGETABLE HISTOLOGY.....	2	2
3. MINERALOGY.—Lectures.....	2	2
4. LOGIC.—Jevons-Hill's; Mill's, unabridged.....	2	2
5. HISTORY.—Myers' Mediaeval and Modern History.....	3	3
6. ASTRONOMY.—Young's Elements.....	3	3
7. ZOOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	9
THIRD TERM.		
1. VEGETABLE PHYSIOLOGY.....	3	3
2. ENTOMOLOGY.—Structure of Insects.....	5	5
3. HISTORY OF CIVILIZATION.....	2	2
4. MILITARY SCIENCE.....	2	2
5. BOTANICAL AND ENTOMOLOGICAL LABORATORY PRACTICE.....	9	9

## SENIOR CLASS.

FIRST TERM.		
1. AGRICULTURE.—Feeding Animals.....	4	4
2. ENTOMOLOGY.—Systematic.....	3	3
3. ANATOMY OF VERTEBRATES.....	2	2
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	4
5. GEOLOGY.—Geikie.....	2	2
6. ZOOLOGICAL AND ENTOMOLOGICAL LABORATORY PRACTICE.....	9	9
SECOND TERM.		
1. AGRICULTURE.....	5	5
2. AGRICULTURAL ZOOLOGY.....	2	2
3. BOTANY.—Cryptogamic.....	2	2
4. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	4
5. GEOLOGY.—Geikie.....	2	2
6. MILITARY SCIENCE.....	1	1
7. ZOOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	9
THIRD TERM.		
1. AGRICULTURE.....	3	3
2. ECONOMIC ENTOMOLOGY.....	2	2
3. VEGETABLE PATHOLOGY.....	4	4
4. INTERNATIONAL LAW.....	4	4
5. PRACTICAL ETHICS.....	2	2
6. ENTOMOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	9
7. THESIS.....	??	??



## JUNIOR CLASS.

*Schedule for Course in Civil Engineering and Mechanics.*

<b>FIRST TERM.</b>		<b>Hours a week.</b>
1. DIFFERENTIAL CALCULUS.—Bowser.....	5	
2. ELEMENTS OF MECHANISM.....	2	
3. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....	2	
4. HISTORY.—Myers' Mediæval and Modern History.....	5	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING—Lettering; Plain and Colored Topography; Machine Construction.....	4	
<b>SECOND TERM.</b>		
1. DIFFERENTIAL CALCULUS.—Completed; Bowser's Integral Calculus....	5	
2. MINERALOGY.—Lectures.....	2	
3. LOGIC.—Jevons-Hill's; Mill's, unabridged.....	2	
4. HISTORY.—Myers' Mediæval and Modern History.....	8	
5. ASTRONOMY.—Young's Elements.....	8	
6. DRAUGHTING—India Ink and Color Shading, etc.....	4	
<b>THIRD TERM.</b>		
1. INTEGRAL CALCULUS.—Completed.....	5	
2. RAILROAD CURVES—Henck's Field Book.....	8	
3. HISTORY OF CIVILIZATION.....	5	
4. MILITARY SCIENCE.....	2	
5. DRAUGHTING—Copying, Tracing, Blue-Print Copying, Railroad Profiles and Cross Sections; Field Work.....	4	

## SENIOR CLASS.

<b>FIRST TERM.</b>		
1. MECHANICS.—Bowser.....	5	
2. BRIDGE-BUILDING.....	4	
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
4. GEOLOGY.—Geikie.....	2	
5. DRAUGHTING.—Graphical Statics, with Applications.....	4	
<b>SECOND TERM.</b>		
1. MECHANICS.—Bowser; Completed.....	5	
2. BRIDGE-BUILDING—Completed; Bowser's Hydromechanics.....	4	
3. CONSTITUTIONAL LAW—Cooley; Essays.....	4	
4. GEOLOGY.—Geikie.....	2	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING.—Graphical Statics, with Applications.....	4	
<b>THIRD TERM.</b>		
1. HYDROMECHANICS.—Completed.....	5	
2. GEODESY.—Lectures.....	4	
3. INTERNATIONAL LAW.....	4	
4. PRACTICAL ETHICS.....	2	
5. DRAUGHTING.—Thesis.....	...	

## JUNIOR CLASS.

*Schedule for Course in Chemistry.*

FIRST TERM.		Hours a week.
1. QUANTITATIVE ANALYSIS.—Fresenius, Cairns; Lectures.....	2	2
2. ORGANIC CHEMISTRY.—Remsen; Lectures.....	3	3
3. ELEMENTS OF MECHANISM.....	2	2
4. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....	2	2
5. HISTORY.—Myers' Mediæval and Modern History.....	6	6
6. MILITARY SCIENCE.....	1	1
7. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	11

SECOND TERM.		
1. ORGANIC CHEMISTRY.—Remsen; Lectures.....	4	4
2. MINERALOGY.—Lectures and Crystallography.....	3	3
3. LOGIC.—Jevons-Hill's; Mill's, unabridged.....	2	2
4. HISTORY.—Myers' Mediæval and Modern History.....	3	3
5. ASTRONOMY.—Young's Elements.....	3	3
6. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	11

THIRD TERM.		
1. STOICHIOMETRY.....	3	3
2. DETERMINATIVE MINERALOGY.....	6	6
3. HISTORY OF CIVILIZATION.....	6	6
4. MILITARY SCIENCE.....	2	2
5. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	11

## SENIOR CLASS.

FIRST TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	3	3
2. PHYSICAL CHEMISTRY.—Lectures.....	5	5
3. REPORTS.—Recent Chemical Literature.....	1	1
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	4
5. GEOLOGY.—Geikie.....	2	2
6. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry.....	11	11

SECOND TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	4	4
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures.....	4	4
3. REPORTS.—Recent Chemical Literature.....	1	1
4. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	4
5. GEOLOGY.—Geikie.....	2	2
6. MILITARY SCIENCE.....	1	1
7. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry.....	11	11

THIRD TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	3	3
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures.....	5	5
3. REPORTS.—Recent Chemical Literature.....	1	1
4. INTERNATIONAL LAW.....	4	4
5. PRACTICAL ETHICS.....	2	2
6. THESIS.....	1	1
7. CHEMICAL LABORATORY.—Quantitative Analysis; Organic Chemistry.....	11	11

## JUNIOR • CLASS.

*Schedule for Course in Electricity.*

FIRST TERM.		Hours a week.
1. DIFFERENTIAL CALCULUS.—Bowser.....	5	
2. ELEMENTS OF MECHANISM.....	2	
3. MENTAL PHILOSOPHY.—Hill's Elements of Psychology ; Janet's Final Causes.....	2	
4. HISTORY.—Myers' Mediæval and Modern History.....	5	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING.—Machine Construction.....	4	
7. LABORATORY.—Physical Measurements.....	3	
SECOND TERM.		
1. DIFFERENTIAL CALCULUS.—Completed ; Bowser's Integral Calculus...	5	
2. MINERALOGY.—Lectures.....	2	
3. LOGIC.—Jevons-Hill's ; Mill's, unabridged.....	2	
4. HISTORY.—Myers' Mediæval and Modern History.....	3	
5. ASTRONOMY.—Young's Elements.....	3	
6. DRAUGHTING.—India Ink and Color Shading, etc.....	4	
7. LABORATORY.—Mechanics ; Measurement of Power.....	3	
THIRD TERM.		
1. INTEGRAL CALCULUS.—Completed.....	5	
2. ELEMENTARY MAGNETISM AND ELECTRICITY.....	3	
3. HISTORY OF CIVILIZATION.....	5	
4. MILITARY SCIENCE.....	2	
5. DRAUGHTING.—Construction, Copying, Tracing, Blue-Print Copying...	4	
6. LABORATORY.—Heat ; Magnetic and Electrical Measurement.....	3	

## SENIOR CLASS.

FIRST TERM.		
1. MECHANICS.—Bowser.....	5	
2. PRACTICAL ELECTRICITY.....	4	
3. POLITICAL ECONOMY.—Walker and Perry ; Lectures.....	4	
4. GEOLOGY.—Gekle.....	2	
5. DRAUGHTING.—Graphical Statics, with Applications.....	4	
6. LABORATORY.—Electrical Measurement.....	3	
SECOND TERM.		
1. MECHANICS.—Bowser's Completed.....	5	
2. DYNAMO-ELECTRIC MACHINERY.....	4	
3. CONSTITUTIONAL LAW.—Cooley ; Essays.....	4	
4. GEOLOGY.—Gekle.....	2	
5. MILITARY SCIENCE.....	1	
6. DRAUGHTING.—Graphical Statics, with Applications.....	4	
7. LABORATORY.—Electrical Testing ; Dynamic Machines.....	3	
THIRD TERM.		
1. MATHEMATICAL THEORY OF ELECTRICITY.....	5	
2. THEORY OF ALTERNATING CURRENTS.....	4	
3. INTERNATIONAL LAW.....	4	
4. PRACTICAL ETHICS.....	2	
5. LABORATORY.—Dynamic Machines.....	3	
6. DRAUGHTING.—Thesis.....	...	

## JUNIOR CLASS.

*Schedule for Course in Biology.*

FIRST TERM.		Hours a week.
1. GENERAL BIOLOGY.—Parker's Lessons.....	5	
2. ELEMENTS OF MECHANISM.....	2	
3. MENTAL PHILOSOPHY.—Hill's Elements of Psychology ; Janet's Final Causes.....	2	
4. HISTORY.—Myers' Medieval and Modern History.....	5	
5. MILITARY SCIENCE.....	1	
6. BIOLOGICAL LABORATORY PRACTICE.....	9	

SECOND TERM.		
1. ANATOMY OF INVERTEBRATES.....	5	
2. VEGETABLE HISTOLOGY .....	4	
3. MINERALOGY.—Lectures .....	2	
4. LOGIC.—Jevons-Hill's ; Mill's, unabridged.....	2	
5. HISTORY.—Myers' Medieval and Modern History.....	3	
6. ASTRONOMY.—Young's Elements.....	3	
7. ZOOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	

THIRD TERM.		
1. VEGETABLE HISTOLOGY.....	4	
2. ANATOMY AND PHYSIOLOGY OF INSECTS.....	4	
3. HISTORY OF CIVILIZATION.....	5	
4. MILITARY SCIENCE.....	2	
5. BOTANICAL AND ENTOMOLOGICAL LABORATORY PRACTICE.....	9	

## SENIOR CLASS.

FIRST TERM.		
1. ANATOMY AND EMBRYOLOGY OF VERTEBRATES.....	4	
2. SYSTEMATIC ENTOMOLOGY.....	5	
3. POLITICAL ECONOMY.—Walker and Perry ; Lectures .....	4	
4. GEOLOGY—Geikie.....	2	
5. ZOOLOGICAL AND ENTOMOLOGICAL LABORATORY PRACTICE.....	9	

SECOND TERM.		
1. ANATOMY AND HISTOLOGY OF MAMMALS.....	5	
2. VEGETABLE PHYSIOLOGY.....	4	
3. CONSTITUTIONAL LAW.—Cooley ; Essays.....	4	
4. GEOLOGY—Geikie.....	2	
5. MILITARY SCIENCE.....	1	
6. ZOOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	

THIRD TERM.		
1. ECONOMIC BOTANY ; VEGETABLE PATHOLOGY.....	4	
2. SYSTEMATIC AND ECONOMIC ENTOMOLOGY.....	5	
3. INTERNATIONAL LAW.....	4	
4. PRACTICAL ETHICS.....	2	
5. ENTOMOLOGICAL AND BOTANICAL LABORATORY PRACTICE .....	9	
6. THESIS.....		

### 3. DESCRIPTION OF THE COURSES OF STUDY.

#### PREScribed STUDIES.

All candidates for the degree of B.S. pursue a certain number of subjects in common in addition to the more specialized studies of the various elective courses. The purpose is to give all who take the bachelor's degree such general training as shall make them broadly-educated and intelligent citizens. These prescribed studies may be grouped as follows:

#### AGRICULTURE AND THE NATURAL SCIENCES.

AGRICULTURE is required two hours a week during the first term of the Freshman year. The aim is to give the student definite information concerning the formation and composition of soils, the growth and development of plants and animals, and the transformations and uses of the various farm products.

ZOOLOGY is required in the Winter term, Freshman year, two hours weekly. Systematic Zoology in the old sense is not taught. The aim is to present, as far as the time will allow, a few of the great biological principles which are illustrated in the animal kingdom. There is, therefore, introduced considerable Physiology as well as Morphology. Some laboratory work is done in the dissection of the oyster and the clam. In this way the student gets a practical knowledge of what is meant by anatomy, histology, development, classification, nutrition, protoplasm, differentiation, heredity, etc. Syllabus No. 6 of the Extension

Course, lectures, and Dorner's Physiology serve as guides in these lessons, supplemented by demonstrations from specimens, charts and Auzoux models.

**BOTANY.**—Students in all courses take Botany two hours a week in the third term of the Freshman year, and the ground covered is embraced by "Gray's Revised Lessons." In connection with the text-book work, each student makes drawings and descriptions of leaves, stems, roots and other parts of plants. This is followed by a thorough study of the flower from living specimens gathered in the field. The terms used in Descriptive Botany are dwelt upon so that each member of the class becomes familiar with the methods of determining the botanical names of plants, and acquaints himself with the relationship of genera and orders. Students are taught the methods of preparing and mounting herbarium specimens, and are required to make collections of their own.

**GENERAL CHEMISTRY** is taught from a text-book fully illustrated by experimental lectures, during two terms of the Sophomore year. An endeavor is made to make the student understand the sure basis of fact on which the science of Chemistry rests, and to reason for himself from these facts. He is also taught to make a careful distinction between facts and theories, and not to confound that which is proved with that which is merely speculative.

**ORGANIC CHEMISTRY** begins in the third term of Sophomore year, so that students looking toward Agriculture and Biology, as well as Chemistry, can get some idea of the

chemical changes connected with their prospective subjects before more detailed study comes. The general behavior of carbon in its compounds is considered, and the different classes it forms, as well as their relations, are studied so that the fundamental chemical changes concerned in the growth of plant or animal can be properly understood by students in these courses. It is continued through the first two terms of the Junior year in the Chemical Course only.

**PHYSICS.**—Three hours weekly, during the entire Sophomore year, are devoted to this subject. The presentation is by lectures, covering the ground of the text-books of Ganot and Deschanel. Recitations are both oral and written, special attention being given to deduction of the general from particulars, as well as to inferences from general principles. The course is supplemented by detailed study of the physical basis of practical machinery during the first term of the Junior year, two hours weekly.

**ASTRONOMY.**—General Astronomy is taught during the second term to all the members of the Junior class. The object of this study is to acquaint the student with the leading facts and discoveries of the new Astronomy, and to present the methods and principles of modern astronomical research. The daily recitations are supplemented by lectures illustrated by photographic lantern views obtained from the principal observatories of the world.

**MINERALOGY** is taught in the second term of the Junior year, lectures being given at each session, illustrated by specimens taken not only from the College collection, but

also from the private collection of the Professor in charge. Full notes of these lectures are required from each student as well as occasional recitations on the subject.

**GEOLOGY.**—In the study of Geology, which occupies two terms of the Senior year, a text-book is used, but each lesson is explained in advance by a short lecture, at which time suitable specimens are exhibited.

#### **MATHEMATICS.**

During the first year all students of the Scientific School are instructed in Algebra, Trigonometry, Surveying and Draughting. Algebra is completed and the students receive field practice in Surveying sufficient to make them familiar with the uses of the compass and transit and able to determine magnetic variations.

At the beginning of the second year the student elects the course he will pursue for the remainder of his College course, and the mathematics included is applicable to such course and will be mentioned in detail under the heading of those courses.

#### **GRAPHICS.**

The instruction in this department is oral and by illustration or supervision, except in Descriptive Geometry. In this subject a text-book is used in the recitation-room, while the principles there discussed are more fully illustrated by problems assigned for graphical solution in the draughting-room. When the student has acquired some facility in the use of instruments, he is taught the methods of Projections, Intersections and Developments of simple



geometrical surfaces. In the Sophomore year, the course in Drawing is based on Descriptive Geometry. Besides the solution of problems in Solid Geometry, the course, during the year, includes practice in Shades and Shadows and Linear Perspective, the work being all directed by mathematical principles.

During the Junior and Senior years, the aim of the instruction is to acquaint the student with some of the many applications of the principles of Drawing bearing especially on those subjects which are applicable in the course which he has elected, much stress being laid on the applications of graphical statics. The design is to prepare intelligent and ready draughtsmen, familiar with fundamental principles and methods; to give the student a safe beginning on which to grow more easily and surely into the work of the practical designer.

#### MODERN LANGUAGES.

ENGLISH.—In the department of English the students are required in the first term of the Freshman year to study the history of the English language; in the second and third terms, the history of English literature and selections of English prose and poetry, and throughout the Sophomore year to write essays in literary criticism which call for the careful study of the best authors. This is supplemented in the Freshman year by a systematic course of private reading prescribed for examination. The instruction is given through text-books, lectures and class papers, in recitations, researches and essays. The course aims to create a love for literature, train the student in the critical

study of it, and impart so much of the literature itself as will enrich his mind with the best thought and his speech with the most expressive diction of our mother tongue.

The recitations in Rhetoric and the training in Elocution and in Extempore Speaking are identical in character and amount with the work done in those branches in the Classical Department. See page 52.

**FRENCH.**—French is taught five hours a week throughout the Freshman year as a required study. An accurate pronunciation is insisted on, and a knowledge of French grammar. In the second term a large amount of easy prose is read, with constant practice in translation both from French into English and from English into French. In the third term the selections offer greater difficulties, and the literary form is studied as well as the language itself. The required course is intended to give to all a practical acquaintance with the language, wide enough to enable them to read ordinary French prose at sight.

**GERMAN.**—German is taught three hours a week during the first term, and four hours a week during the second and third terms of the Sophomore year as a required subject. During the first term, the grammar is the main object of study, with constant practice in the translation of illustrative sentences, both from German into English and from English into German. At the same time the student is required to learn, day by day, short vocabularies of commonly-used words, for conversational drill in the class-room. In the second term easy German prose is read, both in set lessons and at sight, and in the third,

selections from standard authors for careful translation and for literary analysis. It is the aim of the required course in German to give all the students a competent knowledge of the grammar, and a sufficiently large vocabulary to be able to read ordinary prose, and to pursue further study by themselves with ease.

POLITICAL SCIENCE AND HISTORY.

**CIVICS.**—The President meets the Freshman Class during the first term one hour each week for instruction in the rights and duties of the citizen.

**POLITICAL ECONOMY, CONSTITUTIONAL LAW, INTERNATIONAL LAW.**—The President meets the Senior Class of the Scientific School four hours each week during the year for instruction in these branches. See page 49.

**HISTORY.**—For students in the Scientific School the study of History is begun in the Junior year with the use of a text-book as a guide. The course embraces a study of European history from the fall of the Empire to the outbreak of the French Revolution.

The method of instruction is to some extent topical, and aims to furnish information essential to good citizenship, to cultivate a habit of investigation and to teach the student how to come to independent conclusions. Students are encouraged to use the library, are given direction in methods of historical work and are taught the value of historical sources.

**PHILOSOPHY AND LOGIC.**

**PHILOSOPHY.**—The Juniors are required to prepare two recitations a week in Porter's Elements of Intellectual Science during the first term. Fowler's and Jevons' Logics will be studied during the second term. Special courses in Philosophy will be given in Porter's Treatise on the Human Mind, Schwegler's History of Philosophy, Windelband's History of Philosophy, Fowler's and Ueberweg's Logics.

**ETHICS.**—In the third term both sections of the Senior Class pursue the study of Practical Ethics.

**MILITARY DEPARTMENT.**

This department is in charge of the Professor of Military Science and Tactics, an officer of the regular army, detailed by the War Department for the purpose.

Instruction is both practical and theoretical.

**PRACTICAL.**—The student, on entering College, is drilled in the School of the Soldier, including bayonet exercise, and is advanced, successively, to the Schools of the Company and Battalion.

Considerable attention is given to target practice, the College being supplied with latest-model Springfield rifles and a liberal supply of rifle ammunition.

**THEORETICAL.**—During the Junior and Senior years, elementary instruction, by means of lectures and recitations, is given in the Art and Science of War, Modern Tactics,

Modern Small Arms and Cannon, Explosives, Military Correspondence and Reports, Care of Troops in the Field, Military and Martial Law, and other military subjects.

**UNIFORM.**—A uniform, consisting of cap, blouse and trousers of dark-blue cloth, has been adopted, the cost of which is about \$14, or considerably less than that of a good suit of civilian's clothes. The entire suit is neat and serviceable, and, while required to be worn at drills, may be worn on any occasion.

**MILITARY DRILL** is required of all students in the Scientific Department, except as they may be excused by reason of conscientious scruples, physical disability or some similarly valid reason.

In the Gymnasium, a drill-room and armory have been provided for purposes of military instruction.

The object of instruction in this department is not only to comply with the requirements of the laws of Congress for the State Colleges organized under the Act of July 2d, 1862, but also to improve the health and physique of students, and to give that elementary military knowledge which every citizen should possess, that he may render intelligent and effective aid to his country or State in case of war or riots.

#### **PHYSICAL TRAINING.**

Exceptionally fine opportunities for Physical Training are afforded to all students by the new Robert F. Ballantine Gymnasium and the Neilson Field, both of which are elsewhere described.

At the beginning of his Freshman year, each student is

given a physical examination, conducted upon the same plan as that now in use at the leading colleges, and a complete record made of his physical condition. This examination is repeated from time to time, and thus affords valuable information concerning the growth and development of the individual. At the time of the examination, an anthropometric chart is made out, showing the relation of the individual to the normal standard in size, strength and symmetry. From the information thus obtained, cards are made out specifying the exercises most suitable for each case.

With the Scientific students Gymnasium attendance is optional. Classes are formed to suit the general convenience and a progressive source of instruction followed.

During the Winter term a class is formed from the two higher classes for instruction in fencing with foils and single-sticks.

Swimming is regularly taught during the Spring term.

#### OPTIONAL STUDIES.

The members of the Senior Class in the Scientific School may attend the lectures upon the Fine Arts and upon the History and Art of Teaching, which are delivered each year before the Senior Class in the Classical School. See page 53.

In addition to the maintenance of a satisfactory standing in their prescribed and elective studies, regular attendance upon the lectures and upon the examinations in optional subjects is required.

## ELECTIVE COURSES.

## COURSE IN AGRICULTURE.

The object of this course is to provide a broad scientific training, which is now recognized as essential to the best life on the farm.

The major studies of this course include Applied Agriculture, Biology, Botany and Entomology.

**AGRICULTURE.**—In the first term, Junior year, the student is instructed in business methods, relations of weather to farming, the characteristics of the different breeds of farm animals, their care and management, and their adaptability to the various purposes and conditions, and their general economic relations.

The study of the principles of scientific agriculture and their application to the different lines of farm practice, is continued throughout both the Junior and Senior years. The elements contained in the atmosphere and soil being the basis of all vegetable and animal life, the student is instructed in the transformations which take place in these elements in the production of crops, in the growth of animals, and in the principles which govern their conversion into products of the highest economic value.

While suitable text-books are used, the instruction, in both the principles and their application, is imparted mainly by lectures.

**ANIMAL BIOLOGY.**—In the Freshman year the students in Agriculture pursue Zoology two hours a week, the sec-

ond term, reciting with the other students of the Scientific School.

In the Junior and Senior years, Fall and Winter terms, students in Agriculture devote two morning hours and two afternoons a week to General Biology, as follows: General Biology of Plants, first half Fall term, Junior year; General Biology of Animals, second half of same term; Invertebrate Zoology, Winter term.

Vertebrate Zoology and Comparative Embryology, in the Fall term, Senior year; Comparative Anatomy of the Domesticated Animals and Economic Zoology in the Winter term.

For further details see the fuller description of these courses under the Course in Biology. While students in Agriculture devote less time to biological subjects than is required of regular students in Biology, with whom they meet, the portions of the work to which they give attention are chosen with especial reference to their needs. The study of the anatomy of domestic animals is furthered by demonstrations from a fine Auzoux model of the horse.

**BOTANY.**—In the second term of the Junior year, the students examine with the compound microscope the minute structure of the leaves, stems, roots, flowers and seeds of various plants. The accompanying class-room exercises consist of recitations upon, and elaborations of, the work pursued in the laboratory.

During the third term the microscopic study of plants is continued, time being taken for making an herbarium of fifty species of flowering plants, named and neatly mounted.



In the second term of the Senior year a course of lectures is given upon vegetable physiology, and laboratory exercises are continued with ferns, mosses, lichens, algæ, etc. During the third term special attention is given to the various kinds of parasitic fungi, including rusts, mildews, moulds and blights so destructive to crops.

ENTOMOLOGY.—In the third term of the Junior year, Entomology will be taught chiefly by lectures and laboratory practice. Comstock's "Entomology" will be used as a text, and during this term a knowledge of the external and internal structure of insects and of their physiology will be given. Especial attention will be paid to those features which have a bearing on the applied or economic side of the science. In the Senior year an outline of the classification will be given, and the orders will be taken up separately; the most injurious insects in each order serving as types. The collection contains examples of these in all their stages, and the laboratory work will be largely directed to the practical handling of and dealing with the insects in all forms. Insecticides and insecticide machinery will be taken up in the last term and the underlying principles of their successful use will be taught.

For students of Agriculture, not candidates for a degree, provision has been made for College instruction by means of the College Extension system, and in a winter lecture course of six weeks at the College.

#### COURSE IN CIVIL ENGINEERING AND MECHANICS.

During the last three years, the students in this course are instructed in Descriptive Geometry, Analytic Geom-

etry, Railroad Curves, Differential and Integral Calculus, Analytic Mechanics, Hydromechanics, Civil Engineering, Bridge-Building and Geodesy, and have practice two afternoons a week in Draughting, with Exercises and Problems in Geometrical Constructions, in Descriptive Geometry, Topographical, Mechanical and Architectural Drawing and in Graphical Statics.

These subjects, with the exception of Geodesy, are taught by means of text-books, supplemented with numerous practical examples in Descriptive Geometry, Analytic Geometry, Railroad Curves, Differential and Integral Calculus, Statics, Kinematics and Kinetics, Hydrostatics and Hydrokinetics, Roofs and Bridges. Geodesy is taught by means of lectures, including many practical examples from the United States Coast and Geodetic Survey, which the student is required to work out. He is taught how to measure base-lines and reduce them to the sea-level, how to measure angles and adjust them by the method of least squares, and how to compute latitudes, longitudes and azimuths from the field notes. The object of this course is to ground the student well in mathematics, and to give him a substantial knowledge of the theory of civil engineering.

#### COURSE IN CHEMISTRY.

During the last three years, students in this course are instructed in General, Experimental and Agricultural Chemistry, Crystallography, Blowpipe Analysis, Descriptive and Determinative Mineralogy, Analytical, Organic, Applied and Theoretical Chemistry.

The course of study depends, to some extent, upon the student's future pursuit in life.

**EXPERIMENTAL CHEMISTRY** is taught in the recitation-room by carefully-conducted quizzes and full work in the laboratory. The student's first and general knowledge of chemistry is obtained by his own observation.

**BLOWPIPE ANALYSIS** comprises the study of the various reactions and the analysis of a number of substances. Laboratory work is accompanied with constant quizzing in the recitation-room.

**GENERAL CHEMISTRY** is taught from a text-book fully illustrated by experimental lectures, during two terms of the Sophomore year.

**ORGANIC CHEMISTRY** begins in the third term of Sophomore year.

In the first and second terms of Junior year the subject is continued by those in the Chemical Course only. The student is constantly questioned and expected to show a thorough knowledge of all principles developed in the text-book. He also is given imaginary problems and taught how to plan an investigation with carbon compounds, thereby gaining a theoretical knowledge of the methods of research in this subject. Laboratory work follows in the Senior year.

The lectures are accompanied by full experimental illustrations.

**ANALYTICAL CHEMISTRY.**—The student commences with experiments on bodies of known composition, performing those experiments that characterize common, simple sub-

stances, until he is perfectly familiar with the reactions, both theoretically and experimentally, the theoretical part being considered in the class-room. Then complicated bodies are examined, until most difficult substances are readily analyzed.

QUANTITATIVE ANALYSIS is taught in a similar way. The student first analyzes substances of known composition until perfectly familiar with the peculiar manipulation in this subject. Then he proceeds to substances of unknown composition. Through one College year, instruction is given, with recitations and questionings during the first term.

STOICHIOMETRY is taught by lecture, recitation and blackboard drill.

APPLIED CHEMISTRY.—The application of Chemistry to the arts and manufactures is taught by lectures and textbook. Whenever it is practicable, the actual products are exhibited to the students, and the manufacturing processes reproduced in miniature. Attention is drawn to the scientific relations and connections between the various manufactures. The great losses by imperfect methods of manufacture and by waste products are pointed out, and the student is taught to see the true economy of production. Illustrative of the lectures, visits are made to various manufacturing establishments, of which there are a number in and about New Brunswick, and an opportunity is given to see manufacturing operations in actual working.

PRINCIPLES AND THEORIES of Chemistry having recently developed in a very remarkable way, form a most import-

ant branch of Chemistry. Accordingly, the subject extends throughout the Senior year.

**THESIS.**—After finishing experimental organic chemistry, the student takes up work for his thesis chosen by him, but subject to the approval of the instructor.

**MINERALOGY** is taught in the Junior year. In the second term there is a course of lectures in Descriptive Mineralogy, in which the general characters of minerals are discussed, and some of the most important species are carefully studied. Special attention is paid to CRYSTALLOGRAPHY, as being one of the most distinguishing characteristics, and therefore much used in Determinative Mineralogy, which occupies the third term. In this part of the course the student learns to make the tests by which minerals are distinguished from each other, and becomes familiar with their differences by actual handling and comparison. In this course use is made of the College collections, supplemented by the private collection of the Professor in charge.

**GEOLOGY** is studied in the first and second terms of the Senior year. A text-book is used, but each lesson is explained in advance and fully illustrated by the use of specimens, with which the College is abundantly supplied.

#### COURSE IN ELECTRICITY.

This course is similar to that in Engineering, Electrical subjects being substituted for Railroad Curves, Bridge-Building, Geodesy and Hydromechanics.

Its object is to prepare for electrical pursuits which do not demand, at the outset, a complete professional training.

The laboratory is provided with engines, dynamos, motors, and other apparatus needed for all sorts of measurement and testing.

Work in the laboratory is required throughout the Junior and Senior years, and consists of a course of experiments designed to familiarize the students with measuring apparatus while training them in careful quantitative operations. The Senior year is occupied in management and testing of electrical machinery, and it is customary to visit electric light and power plants to study industrial practice on its actual scale.

#### COURSE IN BIOLOGY.

While this course is introductory to medical and special biological studies, it is adapted to the purposes of a general education. Scientific and Classical students electing this course, and also Agricultural students, must divide the time nearly equally between three departments (Zoology, Botany, Entomology) during the Junior and Senior years, according to the following

SCHEDULE FOR ELECTIVE BIOLOGY.

	JUNIOR YEAR.		SENIOR YEAR.	
First term.....{	General Biology of Lower Cryptogams.	General Biology of Lower Invertebrates.	Systematic Entomology.	Anatomy of Lower Vertebrates.
Second term...{	Vegetable Histology.	Zoology of Higher Invertebrates.	Vegetable Physiology.	Anatomy and Histology of Domestic Animals.
Third term...{	Vegetable Histology.	Anatomy and Physiology of Insects.	Vegetable Pathology.	Systematic and Economic Entomology.

**Elective studies:** These begin in the Junior year, as shown in the above schedule. For the number of hours, see the schedule for the "Course in Biology" on page 70. The work is mainly in the laboratory and is pursued by means of microscope and scalpel. The student sketches and describes the objects studied. Supplementary lectures are given. Each student provides himself with Parker's "Lessons in Elementary Biology" and a small case of instruments. Other apparatus, microscopes and materials are provided in the laboratory, for which a fee is required. The following subjects are studied in the order mentioned :

1. General Biology of the lower Plants.—Fall term, Junior year. Topics: Fermentation (Yeast), Fungi (Mucor, Penicillium), Bacteria, Algæ (Pleurococcus, Hæmatococcus, Spirogyra), Chara, Moss, Fern, Alternation of Generations in higher Plants.

2. General Biology of the lower Invertebrates.—Fall term, Junior year. Topics: Protozoa (Amœba, Vorticella, etc.), Cœlenterates (Hydra, Hydroids, Sponges), Vermes (Earthworm, etc.)

3. Zoology of the higher Invertebrates.—Winter term, Junior year. Topics: Echinoderms (Starfish, etc.), Molluscs (Oyster, Clam, Snail), Arthropods (Lobster and other Crustacea).

4. Anatomy (and Zoology) of the lower Vertebrates.—Fall term, Senior year. Topics: Fish, Frog, Turtle, Pigeon, Embryology of the Fowl.

5. **Anatomy of the domesticated Mammals (Mammalian Morphology).**—Winter term, Senior year. Dissection of Cat or Dog ; Practical Histology.

**BOTANY.**—Laboratory study in Botany begins in the second term of the Junior year, and students then pursue a course in vegetable anatomy with the compound microscope, in which they are introduced to the various kinds of tissues and tissue systems as illustrated in the leaves, stems and roots of the higher plants. In the third term, laboratory practice is continued with the histology of the organs of reproduction, and the collecting of plants in the field begun. Each student prepares an herbarium of at least fifty species, all neatly mounted and fully labeled.

The Seniors, in their second term, have a course of lectures upon Vegetable Physiology, special attention being paid to the origin of varieties through cross-fertilization and other causes. In the laboratory, each member of the class becomes familiar, microscopically, with the histology of cryptogams, particularly those best enforcing the principles in Physiology considered in the class-room. The third term is specially devoted to a consideration of those low organisms that are so obscurely known under the general term of the fungous diseases of plants, and embracing one branch of Economic Botany, now called Vegetable Pathology.

**ENTOMOLOGY.**—In the third term of the Junior year, Entomology will be taught, chiefly by lectures and laboratory practice. Comstock's "Entomology" will be used as a text, and during this term a knowledge of the external



and internal structure of insects and of their physiology will be given. Especial attention will be paid to the morphological and biological side of the science. In the Senior year an outline of the system of classification will be given by a study of leading types of all the orders, and the students will be required during laboratory hours to prepare, classify, and arrange collections, in part made by themselves. A very full collection of the insects of the United States will assist in acquainting the student with the family types. The aim will be to give such a knowledge of the subject as a whole, as will enable the student to specialize without further assistance should he desire to continue the study at the conclusion of the course.

#### EXTENSION DEPARTMENT.

The work of the Extension Department has been growing steadily since its inception. During the last year the attendance at the various courses exceeded 1,500, and more than 700 were enrolled in the accompanying classes. The work is conducted in strict accordance with the methods of "University Extension." A course of lecture-studies consists of the following elements:

- (a) A series of lectures.
- (b) A printed syllabus.
- (c) A class-hour, or hour of conference following each lecture.
- (d) Written exercises by members of the class.
- (e) An examination open to those who have taken the whole course.
- (f) Appropriate credits issued to successful students.

Every part of this work is voluntary. Many simply attend the lectures and do not enroll themselves as stu-

dents, but all are encouraged to take the full course, since a far better knowledge of the subject can thus be obtained. All courses consist of twelve lecture-studies unless otherwise specified. For the season of 1894-95 the following courses are offered, to which additions will be made later :

**AGRICULTURE.**

**SOILS AND CROPS, (6).**

By Professor Edward B. Voorhees, A.M.

**THE FOOD OF PLANTS, (6).**

By Professor Edward B. Voorhees, A.M.

**ANIMAL NUTRITION, (6).**

By Professor Edward B. Voorhees, A.M.

**HOW PLANTS GROW, (6).**

By Professor Byron D. Halsted, Sc.D.

**ECONOMIC ENTOMOLOGY, (6).**

By Professor John B. Smith, Sc.D.

**APPLICATIONS OF THE PRINCIPLES OF PHYSICS, (6).**

By Professor F. C. Van Dyck, Ph.D.

**CONSTRUCTION OF ROADS, BRIDGES AND DRAINS, (6).**

By Professor A. A. Titsworth, M.S., C.E.

**GEOLOGY, (6).**

By Professor Frank L. Nason, A.M.

**THE FINE ARTS.**

**GREEK, HELLENISTIC AND ROMAN ART.**

By Professor Edgar S. Shumway, Ph.D.

**SIX GREEK SCULPTORS, (6).**

By Professor Edgar S. Shumway, Ph.D.

**OLD ITALIAN AND MODERN FRENCH ART, (13).**

By Professor John C. Van Dyke, L.H.D.

**HISTORY.****THE BEGINNINGS OF MODERN HISTORY.**

By Professor Edward L. Stevenson, Ph.D.

**THE FRENCH REVOLUTION.**

By Professor Edward L. Stevenson, Ph.D.

**THE FORMATION AND ESTABLISHMENT OF THE UNITED STATES AS A NATION.**

By Professor Edward L. Stevenson, Ph.D.

**THE EASTERN QUESTION.**

By Professor James F. Riggs, D.D.

**VITAL FORCES IN MODERN HISTORY, (6).**

By Professor James F. Riggs, D.D.

**THE PROTESTANT REFORMATION, (6).**

By Professor James F. Riggs, D.D.

**LITERATURE.****THE ENGLISH BIBLE, (6).**

By Professor William Rankin Duryee, D.D.

**SOME REPRESENTATIVE NAMES IN ENGLISH LITERATURE.**

By Professor A. V. Williams Jackson, Ph.D., L.H.D.

**THE ENGLISH DRAMA.**

By Professor A. V. Williams Jackson, Ph.D., L.H.D.

**A CENTURY OF ENGLISH POETRY.**

By Professor Thomas M. Parrott, Ph.D.

**THE GREEK DRAMA.**

By Professor Louis Bevier, Jr., Ph.D.

**STUDIES IN FRENCH LITERATURE, (6).**

By Professor Thomas Logie, Ph.D.

**PHILOSOPHY.****THE WORLD'S GREAT THINKERS.**

By Professor Jacob Cooper, D.D., D.C.L.

**HOW WE KNOW.**

By Reverend John B. Thompson, D.D.

**SCIENCE.****ASTRONOMY.**

By Professor Robert W. Prentiss, M.S.

**BOTANY,**

By Professor Byron D. Halsted, Sc.D.

**CHEMISTRY.**

By Professor Peter T. Austen, Ph.D., F.C.S.

**ELECTRICITY.**

By Professor F. C. Van Dyck, Ph.D.

**ENTOMOLOGY.**

By Professor John B. Smith, Sc.D.

**GEOLOGY.**

By Professor Frank L. Nason, A.M.

**MINERALOGY.**

By Professor A. H. Chester, E.M., Ph.D., Sc.D.

**ZOOLOGY.**

By Professor Julius Nelson, Ph.D.

The cost of these courses to any organization in the State constituting itself an Extension Centre averages about \$20 a lecture-study, but those requiring illustration with the lantern or by means of experiments are somewhat more expensive. Details will be given on application. This charge entitles a centre to the entire course and to

75 copies of the syllabus. No bill of extras will be rendered. If more than 75 copies of the syllabus are required they may be had at 10 cents a copy. These are the charges for the work under all heads except that of Agriculture. For the courses in Agriculture the price has been set at \$10 a lecture-study. This is only possible through the generosity of friends of the late Dr. George H. Cook, who purpose to develop thus the work begun by him for the benefit of the farmers of New Jersey.

All inquiries should be sent to Louis Bevier, Jr., the Secretary of the Extension Department.

THE NEW JERSEY STATE AGRICULTURAL COLLEGE  
EXPERIMENT STATION.

By the Act of Congress of March 2d, 1887, a law was passed entitled "An act to establish Agricultural Experiment Stations in connection with the Colleges established in the several States under the provisions of an act approved July 2d, 1862, and of the acts supplementary thereto." This act is commonly known as the "Hatch Act," from the active interest taken in its passage by Hon. William H. Hatch, M.C., of Missouri. It authorizes the appropriation of \$15,000 annually for the support of Agricultural Experiment Stations in connection with the Colleges which were established in the several States "for the benefit of Agriculture and the Mechanic Arts," by the Congressional Act of July 2d, 1862.

The Legislature of New Jersey, by its acts of March 16th, 1887, and of March 5th, 1888, designated the Trustees of Rutgers College "as the parties to whom all

moneys appropriated by Congress under said acts of Congress or supplements thereto shall be paid for the purposes mentioned in said acts of Congress." The department of Rutgers College known as Rutgers Scientific School is, by law, the State Agricultural College. The Agricultural Experiment Station is established in connection with it.

By the co-operation of the State Experiment Station, a large and well-fitted laboratory has been erected, and investigations are in progress upon the insect enemies of plants, upon the food-products of our fresh and salt waters, and their improvement, upon the diseases of plants, and the application of science to the growth of agricultural and horticultural products, and upon the food consumption and the value of the products of the best breeds of dairy cattle.

While the main business of such a Station is in searching after new truths, and arranging them for practical and economic use, the proper location for it is in connection with an institution of learning. Almost all our investigators are teachers. The investigation and diffusion of knowledge necessarily go hand in hand; and the example of men devoted to the searching for useful truths is stimulating to those who are yet in their preparatory studies, and are aspiring to fill well their places in life.

It is from those now preparing that our future investigators must come, and it is important that they should have those who are now in the field of work directly before them. In this respect it is believed the location of the Station at the College will be most salutary in its influence.

## GENERAL INFORMATION.

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**EXAMINATIONS.**

The classes in both departments are examined at the close of each term. These examinations are partly oral and partly written, and have an important bearing upon the standing of the student in his class.

Unexpected examinations at irregular intervals are held at the discretion of each instructor. The object of these examinations is to cultivate the habit of considering the relations of each day's work to what has been done before, and to stimulate effort on the part of each student to gain a comprehensive knowledge of the subjects studied.

At the end of the first and third terms, the examinations of the classes of the Scientific Section are held in the presence of the Board of Visitors, who then make their semi-annual visits to the institution.

At the end of the third term, each member of the Graduating Class of the Scientific Section is required to present a thesis on some scientific subject, a copy of which is written out upon paper suitable for binding and deposited in the College Library.

The final examination of the Graduating Classes is held four weeks before Commencement, from which time they are subject to such duties as are required for their preparation for Commencement.

Students who receive conditions at the June Examina-

tions must report at College prepared to be examined upon the whole of each of the subjects on which they have conditions, at 10 A. M. on the Tuesday before College opens, in September.

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#### GRADUATION.

To all members of the Graduating Class of the Classical Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Arts.

To all members of the Graduating Class of the Scientific Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Science.

To students, in either Department, who have satisfactorily pursued special courses of study, a certificate is granted stating the studies pursued and the attainments made.

#### CLASS HONORS.

The following regulations have been adopted by the Board of Trustees regarding the graduating exercises at Commencement :

1. There shall be three scholarship honors in each section of the Graduating Class, awarded to those students who shall stand first, second and third respectively, in all the required studies of the Classical or Scientific curriculum, provided that in each individual case the student so standing shall rank among the first four in the major subject or subjects of his elective course. A failure on the part of any candidate to fulfill this condition will render the student standing next in grade of general scholarship



eligible, subject to the same condition regarding the elective course.

2. There shall be no distinction by way of comparison between the scholarship honors of the Classical School and those of the Scientific School.

3. The three scholarship honors of each School shall be designated as follows :

CLASSICAL SCHOOL.

First Honor—Philosophical Oration.  
Second Honor.  
Third Honor.

SCIENTIFIC SCHOOL.

First Honor—Scientific Oration.  
Second Honor.  
Third Honor.

4. An oration to be known as the Rhetorical Honor shall be awarded to that member of either section of the class of those ranking in general grade of scholarship among the first half of his class in all the required studies of the Classical or Scientific curriculum, who shall have received the highest grade in Composition and Elocution during the Junior and Senior years.

A student may receive any one of the three Scholarship Honors and the Rhetorical Honor, but he shall deliver only one oration at Commencement.

5. Two other orations shall be awarded as follows: From a list which shall include those students from both sections of the class who stand in the first half in grade of scholarship in all the required studies of the course, and which shall exclude those who have received Scholarship Honors or the Rhetorical Honor, the two students having the highest grade in Composition and Elocution during the Junior and Senior years shall be chosen as orators.

**SPECIAL HONORS.**

Department or Individual Honors may be granted in each elective subject. Of these there are two in each Classical course, and one in each Scientific course. Such an honor will be granted to that student who stands highest in the particular elective subject, on two conditions :

1. Provided that he stand in the first third of the Classical or Scientific Section of his class in the required studies of his course ; and,
2. Provided that he be recommended to receive that honor by the Professor or Professors who have instructed him in the elective subject or subjects.

Competition for individual or department honors shall begin where the courses begin to diverge, *i. e.*, with the first term, Junior year, in the Classical Department, and with the first term, Sophomore year, in the Scientific Department.

**DEGREES AND POST-GRADUATE STUDIES.**

The Faculty will recommend for the degree of Master of Arts or Master of Science candidates otherwise properly qualified, who, after taking the appropriate Bachelor's degree—

1. Shall pursue for at least one year at Rutgers College a course of liberal and non-professional study, approved by the Faculty, and shall, beside the term examinations, pass a thorough examination on that course and present a thesis on some topic connected with it ; or,

2. Who, not less than three years after taking the Bachelor's degree at Rutgers College, shall make application for the Master's degree, presenting at the same time a certificate of graduation from a Theological Seminary, a Law School or a Medical School, or of admission to the practice of Law or Medicine ; or,

3. Satisfactory evidence by thesis or otherwise of successful labor in education or literature pursued during three consecutive years and of advanced studies prosecuted ; or,

4. In case of Bachelor of Science, satisfactory evidence of successful professional work actually done and advanced professional studies prosecuted.

The degrees of Ph.D. and Sc.D. may be conferred upon resident graduates of the College who shall pursue for two years prescribed courses of study under the direction of the Faculty.

The conditions will be made known on application.

The degree of Civil Engineer is a professional one, and is, on application, conferred upon graduates of the College who have taken the degree of Bachelor of Science, and subsequently have passed three years in the practice and study of engineering, with results satisfactory to the Faculty.

The applicant is required to furnish a statement of the work upon which he has been engaged, and to present a thesis or discussion of some engineering work which he has done. The application and thesis must be presented to the Secretary of the Faculty at least one month before Commencement.

The Trustees of Rutgers College at their meeting held October 25th, 1892, adopted the following resolution :

*Resolved*, That the Trustees will hereafter confer the degree of Bachelor of Divinity (B.D.) on students graduating from the Theological Seminary in New Brunswick on receiving certificates from the Faculty of the Seminary that they have done the work, and successfully passed the examinations prescribed in the rules submitted by the Faculty of the Seminary.

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#### REGULATIONS.

Morning prayers are attended in the College Chapel each morning, except Saturday and Sunday, at 8:40 o'clock.

A Bible Class, attendance at which is voluntary, is held Sunday morning in the College Chapel at 9:30 o'clock.

A sermon is preached every Sunday morning in the College Chapel at 10:30 o'clock. Students are required to be present.

They are expected, also, to attend public worship in the afternoon or evening, at such place as their parents or guardians may direct.

No student is allowed to leave the city during term time without permission from the President or the Registrar.

Excuses for absence from all College duties must be obtained from the Registrar.

Unexcused absences are reported to the Faculty ; and a student is not allowed to make up the recitations omitted, but receives zero as a mark.

Recitations, except in Elective subjects, are marked on a scale of 100, and the average standing of each student

is made up at the end of each term, and sent to his parent or guardian. A mark at examination counts as much as one-third of the term's work up to the time of examination.

If the grade for the term's work previous to the examination, in any subject, fall below 60 per centum of the maximum, the student will be conditioned in that subject.

If the grade of any student in any study at any time fall below 60 per centum of the maximum, his case will be acted on as the Faculty shall deem necessary.

If any student's average grade in any term fall below 60 per centum of the maximum, he will lose his standing in his class, and be required to fall back a year in the course, unless all his deficiencies shall be removed before the opening of the next term.

In Elective courses the only official statement of work done is the announcement, at the end of each term, in each student's report, that he has "passed," or "passed with honor," or "failed." The marks given in elective work are not made public, and do not enter into the ordinary computation of grade. They serve only for the guidance of the Professors concerned and of the Faculty in determining the Scholarship honors at graduation.

If any student shall be found notably deficient in his daily recitations, or at the examination in any of his studies, his case will be reported to the Faculty, and such action by way of discipline will be taken as may be deemed necessary.

No student can be promoted to an advanced class until all his deficiencies are made up; and if he fail to make up all his deficiencies before the opening of the College

year, he will cease to be a member of his class. Examinations for making up such deficiencies are held at 10 A. M. on the Tuesday before the opening of the Session in September.

The Faculty are empowered to pass such regulations relative to the number of boarders in each house as they think proper; and students shall board only at such places as are approved by them.

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### COLLEGE EXPENSES.

#### FEEs.

Tuition, per annum, . . . . .	\$75 00
Incidentals—Janitor, Fuel, Reading-Room, per annum, . .	10 00
Gymnasium Fee, . . . . .	5 00
Admission Fee, . . . . .	5 00
Graduation Fee, . . . . .	7 50
Analytical Chemistry, extra, per term, . . . . .	15 00
Electricity, extra, per term, . . . . .	10 00
Biology, extra, per term, . . . . .	5 00

Of the above expenses, the admission fees are payable on entrance, to the College Treasurer; the incidental expenses are payable at the beginning of the first term, in September; of the tuition fees, one-third, viz., \$25, is payable within ten days after the beginning of each term. All checks should be made payable to the Treasurer of Rutgers College.

For information in regard to rooms and board in Winants Hall, see subsequent pages.

Students in the Scientific Courses are required to procure sets of draughting instruments, costing from \$10 to \$20. They are advised to defer the purchase of these

## CATALOGUE OF RUTGERS COLLEGE, 1894-'95.

## COLLEGE EXPENSES.

The Board of Trustees, on the 5th of March, 1895, adopted the following schedule of fees, to take effect at the beginning of the next academic year:

Classical School.		One Term.	One Year.
Tuition, . . . . .		\$25 00	\$75 00
Public Room Service (Gymnasium, \$6.00; Library, \$3.00; Janitor and Fuel, \$15.00), . . . . .		8 00	24 00
Elective Course in Biology, extra, . . . . .		5 00	15 00
Elective Course in Chemistry, extra, . . . . .		5 00	15 00
Elective Course in Physics, extra, . . . . .		5 00	15 00
Admission Fee, . . . . .			5 00
Graduation Fee, payable before Senior Final Examinations, . . . . .			7 00
Certificate Fee, payable after a special or partial course, . . . . .			5 00

Scientific School.			
Tuition, . . . . .		\$25 00	\$75 00
Public Room Service (Gymnasium, \$6.00; Library, \$3.00; Janitor and Fuel, \$15.00), . . . . .		8 00	24 00
Draughting-Room Fee, extra after Freshman year, . . . . .		5 00	15 00
Electrical Laboratory Fee, extra, . . . . .		5 00	15 00
Chemical Laboratory Fee, extra, . . . . .		10 00	30 00
Biological Laboratory Fee, extra, . . . . .		5 00	15 00
Admission Fee, . . . . .			5 00
Graduation Fee, payable before Senior Final Examinations, . . . . .			7 00
Certificate Fee, payable after a special or partial course, . . . . .			5 00





instruments until entering College, as they will then have the advantage of procuring them under the direction of the Professor of Draughting.

Students in Analytical Chemistry are charged \$15 additional a term, for chemicals and use of laboratory, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with the necessary sets of apparatus, which may be obtained from the regular apparatus dealers, or from the Laboratory Supplies department. These sets are retained through the year, but at the end of it, if the owners do not wish to keep them, they will be purchased at a fair price. If proper care has been exercised, a small discount only (about 10 per cent.) from the original cost will be made. All breakage will be charged in full.

Students in the Electrical Course are charged \$10 extra, a term, throughout the Junior and Senior years, for the use of laboratory and apparatus, which amount must be paid within ten days after the beginning of the term. They are also expected to provide themselves, at their own expense, with files, pocket magnifiers and towels. All damage to College apparatus will be charged in full.

Students in Biology are charged \$5 extra, a term, for the use of instruments and laboratory, which amount must be paid within ten days after the beginning of the term.

Students in the Classical Course, electing Physics, are charged \$5 extra, a term, for the use of the laboratory and apparatus, which amount must be paid within ten days after the beginning of the term.

Free scholarships may be given to young men of approved character and ability, whose family circumstances are such as to make assistance necessary. No deserving student who has shown perseverance and capacity is allowed to give up his course for lack of this assistance.

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#### BENEFICIARY AID.

A student who is preparing for the ministry of the Reformed Church in America and who needs pecuniary assistance, may be placed on one of the Beneficiary Funds which the Trustees hold in trust for the purpose; *provided*, that he engage to pursue his studies uninterruptedly until he shall have completed his theological course in one of the theological schools under the care of the General Synod of the Reformed Church in America, in accordance with the requirements of that Church, Art. 2, Sec. 2.

All who are placed on these funds receive \$150 annually.

##### 1. Van Benschoten Fund.

This fund, the gift of the Rev. ELIAS VAN BENSCHOTEN, in 1814, amounting to \$20,813, was given in trust jointly to the General Synod of the Reformed Church and the Trustees of Rutgers College, to aid in the education of indigent students for the ministry. The students who enjoy the benefits of this fund are appointed by the Trustees of the College on the nomination of the General Synod of the Reformed Church.

**2. Knox Fund.**

This fund, consisting of \$2,000, was given by Mrs. REBECCA KNOX, of Philadelphia, in 1815, to the Trustees of Rutgers College, the income from it to be expended for the support of one student in the Theological Seminary.

**3. W. H. Smock Fund.**

WILLIAM H. SMOCK, of Marlboro, N. J., left by his will, to the Trustees of Rutgers College, the sum of \$500, to be invested as a fund, the interest of which should be used to aid in the education of young men for the ministry. This legacy was received in 1859, and has been duly employed since that time for the purpose named.

**4. Mandeville Fund.**

In 1865, the Trustees of Rutgers College received from the executor of the will of WILLIAM MANDEVILLE, of New York City, the sum of \$2,000, to be invested and the income thereof to be applied to the support of a theological student in the College.

**5. Voorhees Fund.**

ABRAHAM VOORHEES, of Franklin Park, N. J., bequeathed by his will \$26,000 to the Trustees of Rutgers College, the income of which is to be expended in aiding worthy young men who are candidates for the ministry, while pursuing their studies in Rutgers College.

**6. The Brownlee Memorial Fund.**

This fund consists of \$2,000, the income of which is to be used for purposes of ministerial education. It was given.

in 1891 by Mrs. WILLIAM A. BLOODGOOD, of New York, in memory of her father, the late Rev. WILLIAM C. BROWNLEE, D.D., who was at one time Professor of Languages in the College, and afterwards for many years an active and efficient Trustee.

#### 7. Board of Education.

The Board of Education of the Reformed Church grants aid to young men preparing for the ministry in the denomination. The conditions are that the persons receiving aid shall have been members of some Evangelical Church one year, and at the time members of some Reformed Church. The aid may be obtained either while in College or in the Theological Seminary.

At present the amount given is \$150 per annum. Information may be had by addressing the Secretary of the Board, 25 East 22d street, New York City.

#### 8. Rooms for Students.

Such rooms in Peter Hertzog Hall as may not be required for the use of the students of the Theological Seminary, are allowed to be occupied by the students of the College who have the ministry in view, and on the same conditions as the members of the Theological Seminary, *i. e.*, free of charge.

**PRIZES.**

In every case where it is expected that a prize will be awarded for work done, it is distinctly announced that unless in the opinion of the examiners the work submitted is of such excellence as to merit a prize or prizes, no prize will be awarded.

Whenever a prize requires both an essay and an examination, the essay must be handed in before the hour fixed for the examination.

All prizes are open equally to members of the Classical and Scientific Departments, except in cases where they are specially limited to one department by the donor. Each competitor for a prize must sign a written declaration that the essay or other work offered by him is his original and unaided work. The essays are to be written on a paper of a prescribed kind, and the successful essay is to be deposited in the College Library, before the writer is entitled to the prize.

**1. Suydam Prize for Composition.**

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall write the best English Composition on the subject assigned to the class by the Professor of Rhetoric. Competitors must hand in their compositions on or before April 20th. Subject for 1895: "English Critics of the Nineteenth Century."

**2. Suydam Prize in Natural Science.**

This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall have made the greatest attainments in Natural Science. The examination is upon all the subjects of Natural Science in the College course, Astronomy, Biology (including Physiology and Zoology), Botany, Chemistry, Geology and Physics, and is conducted by the Professors of those subjects. The questions and answers are required to be written.

**3. Brodhead Classical Prize.**

This prize is the gift of Rev. Dr. JACOB BRODHEAD and his son, J. ROMEYN BRODHEAD, LL.D. It is the interest on \$500, *i. e.*, twenty-five dollars, to be given to the best Senior Classical scholar, on the following conditions:

First. "That those who offer themselves as candidates for it shall be subjected to a special examination, at a time to be fixed by the Faculty near the close of the Senior year."

Second. "That the subject of the examination be a passage or play of some classical author (not included in the College programme of studies), to be selected by the Classical Professors, and to be announced at least one month before the time fixed for the examination."

Third. "A subject for an essay shall be announced at the same time, and the essay shall be given in on the day of examination."

Fourth. "Both the examination and the essay shall be

taken into account in the adjudication of the prize. A law copy of the essay of the prize-man shall be handed in by him before the medal is put into his hands, to be preserved among the archives of the College."

(a) Text for examination in Latin: Suetonius' Tiberius; and Velleius Paterculus, Book II., ch. 94-131.

(b) Subject of essay to be written in Latin, not less than ten (10) thesis pages: "The Character of the Emperor Tiberius."

#### 4. Bradley Mathematical Prize.

This prize was established by the late Hon. JOSEPH P. BRADLEY, LL.D., Class of 1836, and is maintained by his son, CHARLES BRADLEY, Esq., of the Class of 1876. It consists of a valuable Mathematical work, which is to be bestowed on the student of the Senior Class who shall present the best solution of a set of Mathematical problems to be proposed to the class by the Professor of Mathematics before the close of the second term.

#### 5. Myron W. Smith Memorial Prizes for Declamation.

These prizes were founded by LYNDON A. SMITH, M.D., of Newark, in the name of his son, Adjutant MYRON W. SMITH, who was a graduate of the College in the Class of 1858, and who gave his life in the late war to the cause of his country. They consist of the interest of \$500 (twenty-five dollars), proportionately appropriated to two medals, one of gold and the other of silver, which are to be awarded respectively to the best and second-best speakers of the Sophomore Class. Only those students who shall

have pursued, in the College, the regular studies of the Classical or a full Scientific course from the beginning of the Freshman year, shall be allowed to contend for these prizes.

The competition for these medals shall take place before a committee of the Faculty, when the best and second-best speakers shall be selected, to whom the medals shall be awarded, and six others shall receive honorable mention in their order of excellence. The medals shall be presented at Commencement.

**6. Tunis Quick Prize in Spelling and in English Grammar.**

This prize, the gift of the late P. VANDERBILT SPADER, Esq., of New Brunswick, is the income of \$300, at 5 per centum, and is to be presented to that member of the Freshman Class, Classical or Scientific, who shall pass the best examination in Spelling and in English Grammar.

The examination is to be conducted in writing by the Professor of English Literature, at as early a day as convenient in the second College term, and under such regulations as the Faculty may from time to time establish.

The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition. In case the prize be not awarded in any year, it is to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prize, are subject to change by the Board of Trustees.



**7. Peter Spader Prizes in Modern History.**

These prizes, the gift of the late P. VANDERBILT SPADER, Esq., are two in number, the income of \$400 and \$300, respectively, at 5 per centum, and are to be awarded to those members of the Sophomore Class, Classical or Scientific, who shall present the best essays on some subject in Modern History, selected by the Professor of History, with the approval of the Faculty.

The subject is to be announced at the close of the Freshman year, and the competing essays are to be handed in on or before the last Monday in May of the Sophomore year.

The committee annually appointed by the Faculty may decline to award these prizes, or either of them, for want of merit in the essays, or for failure of proper competition. In case the prizes be not awarded in any year, they are to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prizes are subject to change by the Board of Trustees.

Subject for 1895: "Jesuit Missions in America and their Influence on its Settlement."

**8. Appleton Memorial Prize in Moral Philosophy.**

This prize was founded by a gift of \$500, from the Rev. SAMUEL E. APPLETON, D.D., in the name of his mother, Mrs. ELIZABETH APPLETON. It consists of twenty-five dollars, the interest of the above sum, and will be given

"to the member of the Senior Class who shall pass the best examination in Moral Philosophy."

For 1895: Examination upon Muirhead's "Elements of Ethics," pp. 63-186.

**9. Bowser Engineering Thesis Prize.**

A prize consisting of a valuable Engineering work is given by Professor E. A. BOWSER, LL.D., to that member of the Engineering Section of the Senior Scientific Class who shall present the best thesis upon some Engineering subject at graduation.

**10. John Parker Winner Memorial Prize in Mental Philosophy.**

This prize consists of twenty-five dollars, given by JOHN WINNER, Jr., and his wife, in memory of their deceased son, JOHN PARKER WINNER. It will be open to competition for students in both the Classical and Scientific Sections who are pursuing the study of Mental Philosophy, and will be bestowed on the one who shall pass the best examination on some work assigned by the Professor of Metaphysics.

(a) Work for 1895: Examination upon Janet's "Final Causes."

(b) Subject for essay: "Is Adaptation Conceivable Without Teleology?"

**11. William H. Van Doren Prize for the Best Essay on Christian Missions.**

This prize consists of twenty dollars, the gift of the Rev. WILLIAM H. VAN DOREN, D.D. It is open to competition

for members of the Senior and Junior Classes in both sections, and for members of the Theological Seminary.

Subject for 1895, essay limited to 3,000 words: "The Progress of Home Missions during the last Twenty-five Years."

#### **12. Junior Exhibition.**

Eight members of the Junior Class in the regular courses are chosen each year, on account of their abilities in Composition and in Elocution, who deliver original speeches at an exhibition held on the Monday evening preceding Commencement. The selection is made by a committee of three persons appointed for that purpose by the Faculty.

A prize of twenty-five dollars, the gift of RALPH N. PERLEE, Esq., of New York City, is awarded by a special committee at the time of the exhibition to that orator who shall be adjudged the best writer and speaker among the contestants.

#### **13. Hart Prize in English Literature.**

A prize of twenty-five dollars is offered to the members of the Sophomore Class for the best essay upon a subject in Literature; the theme is assigned by the Professor of that Department, and the prize is awarded by a committee appointed by him.

Subject for 1895: "Thomas Gray."

#### **14. The Sloan Prizes for the Best Entrance Examinations, Classical Course.**

See page 21.

**15. The Bussing Prizes for Extempore Speaking.**

Mrs. ANN VAN NEST BUSSING, of New York City, has given to the College \$1,000, the income of which (fifty dollars per annum) is to be expended each year for books, which shall be selected by the President of the College, and given as follows: The First Prize, of thirty dollars, to that member of the Senior Class who shall prove himself to be the best extemporaneous speaker; the Second Prize, twenty dollars, to the second-best extemporaneous speaker of the Senior Class. The prizes are to be awarded by the Faculty of the College, or by a committee whom they shall name, and shall be awarded after a public debate to be held in the latter part of the College year. In awarding the prizes, "strict attention shall be given to logical and forcible presentation of thought, full and accurate information as to matters of fact, and grace and effectiveness in delivery." For the sake of training students in the clear expression of intelligent thought upon matters of public interest, each class has an exercise in extempore speaking twice in each term. The subject is announced to the class, and, after five minutes for thought, the members of the class discuss the subject or debate the question before a committee.

**16. Van Vechten Prize—Essay on Christian Missions.**

A. V. W. VAN VECHTEN, Esq., of New York City, has founded, in honor of his mother, the late LOUISA VAN VECHTEN, and his father, Rev. SAMUEL VAN VECHTEN, D.D., a prize of sixty dollars, by the gift of \$1,000, the prize "to be given annually to that student of Rutgers College who shall be adjudged by the Faculty of the Theo-

logical Seminary of the Reformed Church of America, at New Brunswick, to have presented an article, original with himself, and the best submitted—the most conclusive and inspiring to strengthen faith in and love for Foreign Missions.” The essays are limited to 3,000 words, and are to be presented on or before May 1st of each year.

Subject for 1895: “Industrial Missions and the Self-supporting Theory.”

**17. The Class of 1876 Prize Fund for the Encouragement of the Study of Political Philosophy.**

The Class of 1876 have given to the College one thousand dollars (\$1,000) as the foundation of a Prize Fund (which they express the hope that they may increase from time to time, until it shall be sufficiently large to establish a Fellowship), for the encouragement of the study of Political Philosophy. The income of this fund is to be awarded each year “to that member of the Senior Class (either Classical or Scientific) who shall be adjudged entitled to it, \* \* \* on the basis of an original essay on some subject in Political Philosophy, assigned by the Professor of that science in the College, and upon a competitive examination in a text-book also selected by him;” the committee of award to consist of “three competent persons selected by the Faculty of the College, at least one member of the committee to be a member of the Class of 1876 as long as any may be living.”

(a) An examination upon Bluntschli's “The Theory of the State.”

(b) Subject of essay for 1895: “Our Relations with France from 1789 to 1825.”

**18. Upson Prize in American Literature.**

For the encouragement of study in American Literature, a prize of fifty dollars is offered by the Librarian, to be awarded by a committee appointed by him, to that member of the Junior or Senior Class who shall write the best essay upon a subject assigned by him, and upon the following conditions :

First. The essay, of not more than 5,000 words, must be presented in writing upon the standard thesis paper of the College, with the understanding that the original copy is to be preserved in the College Library.

Second. Each competitor must sign his essay with a fictitious name, according to the general rules of the College, and hand it to the Librarian on or before May 1st, 1895.

Third. The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition.

Subject for 1895 : "Nathaniel Hawthorne."

**19. The Bradley Prize in Roman Law.**

This prize was founded by the Hon. JOSEPH P. BRADLEY, LL.D., late Associate Justice of the Supreme Court of the United States, and is maintained by his son, CHARLES BRADLEY, Esq. It consists of a valuable work on Roman Law.

The examination upon text will be : Gaius, III., 90-127 ; Justinian Inst., III., Titles 15-20 ; Justinian, Digest, 45, 1.

The subject of the essay for 1895 will be : "The 'Stipulatio,' or Roman Contract 'Verbis.'"

The prize may be competed for by Seniors and Juniors.

**20. The Class of 1866 Prize for Attainments in Electrical Science.**

The Class of 1866, being the Centennial Class after the grant of the first charter, has established a prize of fifty dollars, to be awarded to that member of each graduating class who has taken a full course leading to the degree A.B. or B.S., including the higher mathematics and physical laboratory practice, and who has shown, in the judgment of the Faculty, the greatest degree of proficiency in the science of Electricity.

A special examination, conducted by an appropriate committee of the Faculty, will be held Saturday, May 18th, 1895, at 2 P. M., to select the recipient of the prize. If, in the opinion of the committee, none of the competitors deserve the prize, it will be withheld.

**21. The Delta Phi Senior Orator Prize.**

A prize of twenty-five dollars is offered by the Epsilon Chapter of the Delta Phi Fraternity to that member of the Senior Class who shall write and pronounce the best English Oration.

The basis of award of this prize shall be as follows :

Essays shall be written upon any one of certain subjects designated by the Faculty and submitted to a committee thereof.

From these essays, the best, not to exceed five in number, shall be chosen, and their writers having given these essays such form as may best suit the purpose, shall pronounce them in public before a committee appointed by the Faculty, who shall thereupon adjudge the prize.

**22. The Luther Lafin Memorial Prizes in Metaphysics.**

These prizes are given by LUTHER LAFLIN KELLOGG, Esq., of New York City, in memory of his grandfather, LUTHER LAFLIN, deceased.

The first prize of one hundred dollars will be open to students of either the Junior or the Senior Class in both the Classical and Scientific Sections, and will be bestowed on the one who shall pass the best examination on some work and shall submit the best essay on some theme assigned by the Professor of Metaphysics.

(a) An examination upon Aristotle's "Metaphysics," Books I.-XIII.

(b) Subject for essay in 1895: "Aristotle's Ten Categories: Do they Exhaust the Principles of Knowledge and are they the Best Summary thereof?"

The second prize of fifty dollars will be open to students of either the Junior or the Senior Class, in the Scientific Section only.

(a) An examination upon Jevons' "Principles of Science."

(b) Subject for essay in 1895: "Is Teleology Necessary to the Construction of a Scientific System?"

**23. Barbour Prizes in Speaking.**

These prizes, two in number, of the value of fifteen dollars and ten dollars respectively, are offered by the Instructor in Elocution. The eight members of the Freshman Class of either section in regular course who shall stand highest in Elocution during the entire year may compete before a committee appointed by the Faculty.



**24. Prize in Logic (\$50).**

Open to Classical Students in full standing only.

(a) Examination upon Ueberweg's "History of Logic and Logical Doctrines" (English translation by Lindsay).

(b) Subject for essay: "Can Inductive Reasoning Arrive at Certainty?"

**25. A Prize in Logic (\$50).**

Open to Scientific Students in full standing only.

(a) Examination upon Mill's "A System of Logic." (Eighth edition.)

(b) Subject for essay: "Criticism of Bacon's, and Other Modern Objections, to Aristotle's Syllogism as an Organ of Reasoning."

**Honorable Mention for Work Outside the Course done  
without Reference to a Prize.**

For the encouragement of independent reading and study and original investigation, under the direction of the Faculty, honorable mention is made of students who give evidence of thoroughness in such work, and pass a satisfactory examination.

Irving S. Tompkins, of the Class of 1894, receives honorable mention for work done and examinations passed in German.

## BUILDINGS AND EQUIPMENT.

QUEEN'S COLLEGE—Erected 1808-1809. This building occupies the central position of the group of College buildings. It contains nine recitation-rooms, a commodious lecture-hall and the offices of the President and of the Registrar.

THE FINE ARTS BUILDING—Erected 1841-1842. The residence of former Presidents of the College has been refitted for the uses of the Fine Arts Department of the College, and is known as The Fine Arts Building. It contains the art collections of the College, including "The Thomas L. Janeway, M.D., Memorial Collection" of casts and photographs, and the various gifts of friends of the institution.

The pictures, models, casts and photographs are arranged to represent, as far as possible, the art of the world. A new lecture-room, having adequate facilities for illustrating lectures by the stereopticon and otherwise, is in use, and the arranging and classifying of the Museum is going forward. Acquisitions are being continually made to the Museum, and every facility for illustrating the history of art is being added to the department. Besides the lectures of the Professor in charge of this department, subjects related to the fine arts will be treated from time to time by other lecturers.

**The Thomas L. Janeway, M.D., Memorial Collection**

to illustrate Classical Archæology, is the gift of the heirs of Dr. THOMAS L. JANEWAY, of the Class of 1863.

It already includes (1) eight casts from marbles typical of the chief periods in the history of sculpture. These casts were manufactured by Brucciani & Co., of London. (2) Five hundred casts from engraved gems (cameos and intaglios) and coins, Greek and Roman. These were selected with an eye both to the study of the development of the art and to the especially full illustration of its best achievements. The workmanship on these casts is that of Augustus Ready, of the British Museum. (3) Eight hundred stereopticon slides, of which all but eighty-two were made by the well-known Levy, of Paris. (4) One thousand photographs and restorations. Among the photographers are Bonfils, of Beirut; Sommer, of Naples; Anderson, of Rome; Mansell, of London; Lombardi, of London; Quaas, of Berlin; Hauteœur, of Paris.

The collection, made in Europe by a member of the College Faculty, is designed to illustrate the topography, art, life and literature of Ancient Greece and Rome, and for this purpose is used constantly by College classes.

VAN NEST HALL was erected in 1845, and named for Abraham Van Nest, Esq., a liberal trustee, in recognition of his services and gifts to the College.

In 1893 it was beautified by the addition of a stone porch, the gift of Mrs. Ann Van Nest Bussing, daughter of Abraham Van Nest, who at the same time refitted the eastern portion of the second story into a handsome hall

for the regular and occasional exercises of the students in Elocution.

During the same year the Trustees added a third story to the original building, thus creating a large and well-lighted room for the use of the classes in Draughting. On the second floor is another room for the advanced work in Graphics.

The rooms of the Peithessophian and Philoclean Literary Societies are on the first floor.

The building also contains the collections for illustrating the instruction given in the Engineering courses, comprising a great variety of models showing details of construction in wood, iron and stone, with a full set of Schröder and many Olivier models in Descriptive Geometry, besides blue prints, working drawings and lithographs of roof and bridge trusses. A complete outfit of Engineering and Surveying instruments is owned by the College for the use of the students in the Surveying classes.

THE DANIEL S. SCHANCK OBSERVATORY, erected in 1865, is a two-story brick building, with revolving dome, constructed especially for astronomical work. It contains in the main part the equatorial refracting telescope, mounted on a pier of solid masonry extending several feet below the surface of the ground, and detached from the floors, through which it rises, so as to be unaffected by the tremors of the building. The telescope is eight feet four inches in focal length, with an aperture of six and one-half inches, and was made by the late Henry Fitz, of New York. It has a small telescope attached for a finder,

a driving clock, a position micrometer, a number of eye-pieces of various powers ranging from 50 to 600 and a solar attachment for the study of sun-spots. The declination circle is ten inches in diameter, reading by verniers to one minute of arc, and the hour circle, seven and one-half inches in diameter, reads by verniers to six seconds of time.

On the west side of the main part is an extension for transit observations. The meridian circle used for this work was made by Stackpole, of New York, and has an object-glass four inches in diameter and four feet ten inches in focal length, with circles seventeen inches in diameter, reading by two microscopes with micrometer screws to single seconds of arc. The diaphragm carries one horizontal and seven vertical wires. There is also a striding spirit-level and an apparatus for reversing the axis of the instrument. The bearings rest on two stone pillars, supported by piers of masonry.

The observatory has also a sidereal clock, by Wm. Bond & Son, the gift of John Clark, Esq., of New Brunswick, with an electrical break-circuit; a mean solar clock, the gift of the Peithessophian Society of Rutgers College, and a reflecting circle, the gift of the Philoclean Society of Rutgers College, and several barometers and thermometers.

The observatory is in connection with the Western Union Telegraph line, so that time-signals may be exchanged with other observatories. The whole building and the instruments are illuminated by the electric light. The instruments are all in good working condition, and

the student of practical astronomy has here unusual facilities for learning the theory and use of astronomical instruments. The observatory is used in connection with the course in general astronomy to give a knowledge of the sun, moon, planets, etc. Those who elect Mathematics and Astronomy receive instruction in the use of the instruments and take part in the observations. Post-graduate students can take a still more extended course.

The longitude of the observatory is  $0^h 10^m 25.08^s$  east of the old Naval Observatory, Washington, D. C.

The latitude is  $40^\circ 29' 57.6''$  N.

**GEOLOGICAL HALL**—Erected 1871. The Physical Department occupies seven rooms on the main floor, and three in the basement. There are two lecture-rooms, an apparatus-room, a general laboratory, one laboratory for work requiring even temperature, a battery-room and an office.

The lecture apparatus comprises the usual instruments. The laboratories contain general apparatus, such as dividing engine, a set of United States standard weights and measures, metric standards, spherometer, planimeter, etc. Among the special apparatus are a steam engine, a gas engine, electric motors of various patterns, a storage battery, a model Edison three-wire plant of about two hundred lights capacity, a full set of electrometers, galvanometers and rheostats. The reference-books most frequently consulted are kept in the rooms of the department, ready for instant use.

In the large exhibition-room in the Geological Building

the various collections in Natural History are displayed. Through the indefatigable perseverance of the late Dr. George H. Cook, who was especially interested in this side of the College equipment, very valuable collections have been secured, illustrating a wide range of subjects.

The collection in Lithology is quite complete, all the well-known rocks being illustrated. The rocks of Europe are particularly well shown. There is a very fine collection to illustrate Palæontology, which, while it well covers the whole subject, is specially rich in the fossils of this State. These two collections occupy the cases on the north side of the room. The large collection of shells, to illustrate Conchology, is displayed to good advantage in a series of table-cases in the gallery. The collection of Minerals occupies the cases on the south side of the room, and is quite full, though there are still many gaps in it. The varieties found in this State are well represented. One case at the east end of the room is filled with specimens of stone implements and ancient pottery, many of which have been found near New Brunswick, and which illustrate prehistoric Anthropology. Two large central cases contain the Beck Collection of Minerals, and two others are filled with the rocks, clays and iron ores of New Jersey.

During the past two years an attempt has been made at a systematic arrangement of these collections. The minerals have been carefully and completely arranged and labeled in such a way that they can be conveniently studied. The rocks and fossils are now undergoing the same treatment, and will be in complete order before the end of the present year. It is intended to treat all the

collections in a similar way, each label giving the donor's name whenever it can be obtained.

Donations are solicited from friends of the College to increase its collections, and to aid in the illustration of any of the subjects taught.

**THE KIRKPATRICK CHAPEL AND LIBRARY**—Erected 1872—is built of brownstone, in the French Gothic style of the Fourteenth Century. The auditorium is attractive, having a roof of opened timber, finished in black walnut and stained pine. On the walls hang numerous portraits of former officers and benefactors of the institution. It has a seating capacity for 350 persons.

Back of the Chapel is the large room designed for the President's classes, and adjoining is the assembly-room for the Trustees. Above these rooms is the Library.

#### LIBRARY.

The Library of the College, containing 30,000 volumes, is open for consultation during each term as follows: On Mondays, Tuesdays, Wednesdays, Thursdays and Fridays, from 8 to 8:40 A. M., and from 12 M. to 12:50 P. M., and from 2 P. M. to 4:30 P. M.; on Saturdays from 9 A. M. to 12:50 P. M., and from 2 to 4:30 P. M. Students are allowed free access to the books, and are encouraged to become familiar with the proper methods of using a library for literary work.

In 1887, the late P. VANDERBILT SPADER, Esq., of New Brunswick (a member of the Class of 1849), gave to the College his personal library, valued at \$15,000, and con-



sisting of about 5,000 books, among them many very valuable art volumes, and collections especially rich in State and local history, and in books of reference. By his will the College has received \$10,000, the income of which is to be expended for the maintenance and increase of the P. Vanderbilt Spader Library Gift.

By the gift of a permanent fund of \$1,000 from JAMES SUYDAM, Esq., supplemented by gifts from other sources, the library is supplied with the leading periodical publications in the various departments.

By the courtesy of the Theological Seminary of the Reformed Church, the Sage Library of more than 40,000 volumes is opened to the students of Rutgers for consultation; and under certain limitations books are drawn from it as well. It is within four minutes' walk of the College campus.

THE STATE LABORATORY of the New Jersey Agricultural Experiment Station was authorized by an act of the Legislature approved April 23d, 1888, and the building was well advanced at the close of that year. It affords accommodations for the uses of the State and Agricultural College Stations, and by the courtesy of the Board of Managers of the State Station, who also constitute the State Board of Visitors to the Agricultural College, for the laboratory and class-room work of the students of the Agricultural College who are pursuing the regular and special courses in Agriculture, Chemistry and Biology.

The Agricultural and Biological departments have an equipment for purposes of instruction, consisting of—

(a) College Farm—equipped with modern farm buildings and arrangements, including improved farm implements, such as potato-diggers, seed-planters, and farm machinery, engine and boiler, cutters and crushers for fodder, hay-loaders and mowers. The dairy is equipped with the leading cream separators, Babcock tester, etc. The live stock includes examples of the five leading dairy breeds and several new crosses, and of three poultry breeds.

(b) Laboratories—separate rooms for Botany, for Entomology and for Zoology have been equipped with tables, accessory microscopic apparatus, histological reagents, microtomes, material for dissection, a dozen compound microscopes (Reichert's and Leitz's make), giving powers up to 800 diameters ; also dissecting microscopes.

(c) Auzoux Models—illustrating the structure of Man, Horse, Bird, Reptile, Fish, Mollusc, Worm, Insects (Cockchafer, Silkworm larva and moth, Honey-bee and its work) and Plants (various flowers, fruits and fungi).

(d) Charts (including many of Leuckart's charts)—illustrating the various parts of the living world ; also many photographs and lantern slides.

(e) Cabinets—a collection of slides illustrating histology and the anatomy of minute animals, especially the insects ; also a collection of 5,000 species of insects systematically arranged ; also a collection of nearly 25,000 plants.

(f) Museums—a collection of stuffed animals and alcoholic specimens systematically arranged, 60 large boxes containing a collection of injurious insects and examples of their work, a systematic collection of over 5,000 species of American insects, preparations of pathological plant

specimens, a collection illustrating the biology of the oyster, its messmate and enemies, and a fine systematic collection in Conchology.

(g) Besides this equipment for direct instruction, the student has brought under his observation the equipment of the research laboratories of the experiment stations in working operation, such as the processes and instruments used in the study of milk, soils, fertilizers, bacteria, Mycology, micro-photography, insecticides, fungicides and other experiments relating to agriculture.

The facilities for teaching Chemistry are fully equal to the demands. The two laboratories furnish abundant room to the students, and are equipped with filter-pump, water-blast and tables for organic analyses, besides the ordinary facilities found in all laboratories. An adjoining room has been fitted up as a department library, in which are standard works of reference and the important chemical journals on file. The students are encouraged to spend all spare time in this room. The lecture-room is abundantly lighted, and the table well fitted for experimental lectures. Special pieces of apparatus are constantly acquired, particularly to illustrate the more difficult points in the new developments of Chemistry, and for investigation. The collection to illustrate the lectures on Applied Chemistry is growing. Contributions are earnestly solicited.

**WINANTS HALL—DORMITORY—Erected 1890.** This building serves as a dormitory and refectory for such students as choose to lodge and board at the College.

It accommodates 100 students. The rooms are arranged in suites of a study and two sleeping-rooms, for two and three room-mates, and there are a few single rooms. Special attention is given to light, ventilation and sanitary appliances, and to the necessary quiet retirement and privacy of the students.

Ample provision is made for fire-escapes and other securities against accidents.

The entire building is heated by steam. Bath-rooms, lavatories and store-rooms are on each floor.

The large study-rooms are each furnished with two study tables and two chairs. The bed-rooms are each furnished with a solid oak set, consisting of bedstead (springs and mattress), bureau and washstand. The remaining furniture, such as sheets, pillows, pillow-cases, coverlets, towels, bowl and pitcher, etc., are to be supplied by the occupant. The schedule of prices for single rooms and suites of rooms includes heat and gas light.

In drawing for choice of rooms, the order of classes will be followed, precedence being given to the Seniors.

Rooms are to be taken for the full year. Rent is payable in advance, one-third at the beginning of each term. Agreement to pay rent is for the entire suite, and must be signed by the student who draws it, or his guardian. Rooms may be occupied from the Monday preceding the opening of the College year to the Saturday following Commencement.

During the present year board is furnished by the matron at \$3.75 a week.

The drawing for choice of rooms for the year 1895-'96

will take place in the Registrar's office on Wednesday, June 5th, 1895, and 2:30 P. M.

SCHEDULE OF PRICES A WEEK OF ROOMS IN WINANTS  
HALL FOR 1895-'96.

The following schedule gives the weekly rental for each occupant of the respective rooms, and no more may occupy any suite than is indicated in parenthesis after the room numbers. One student occupying a double room, or two students occupying a room intended for three, will be charged the full rental for the suite :

**\$1.00**—11 (1), 15 (1), 16 (1), South, First Floor; 116 (1), 117 (1), 121 (3), North; 127 (3), South, Fourth Floor.

**\$1.25**—5 (3), North; 9 (2), 20 (2), South, First Floor; 118 (2), North; 132 (2), 135 (1), 136 (1), 137 (2), South, Fourth Floor.

**\$1.50**—70 (3), 76 (1), 77 (1), 81 (3), North; 102 (3), 113 (3), South, Third Floor.

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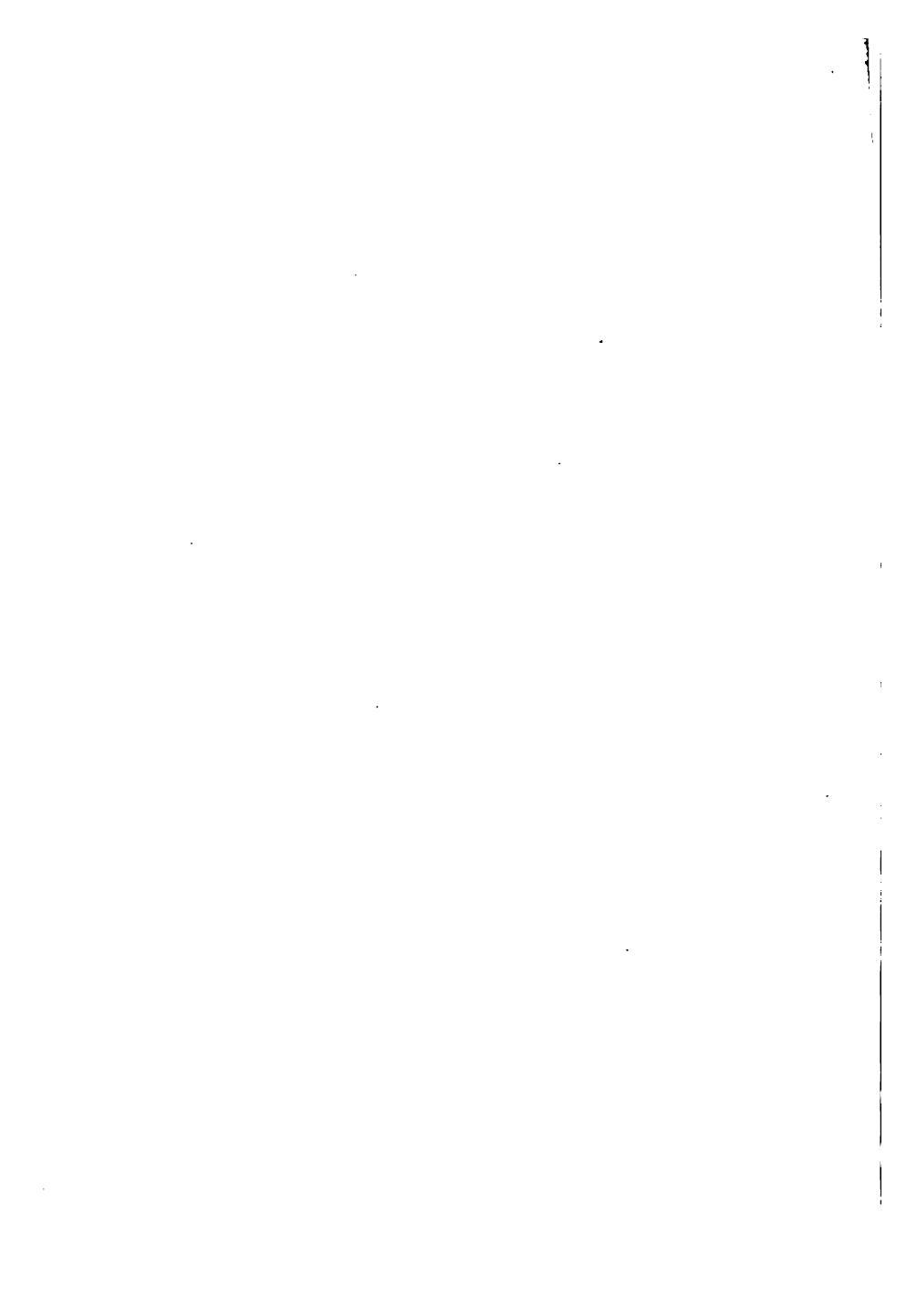


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CATALOGUE  
OF THE  
OFFICERS AND STUDENTS  
OF  
RUTGERS COLLEGE  
AT  
NEW BRUNSWICK, N. J.

1895-96

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CHARTERED AS QUEEN'S COLLEGE A. D. 1766

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PRINTED FOR THE COLLEGE

<i>Names.</i>	<i>Address.</i>	<i>Date of Election.</i>
ERNEST J. MILLER, ESQ.,	Albany, N. Y.,	June 16, 1886.
HON. JONATHAN DIXON, LL.D.,	Jersey City,	June 22, 1886.
JAMES NEILSON, ESQ.,	New Brunswick,	June 22, 1886.
REV. RODERICK TERRY, D.D.,	New York City, 169 Madison Ave.	June 22, 1886.
TUNIS G. BERGEN, PH.D.,	Brooklyn, N. Y.,	Oct. 25, 1887.
REV. EDWARD B. COE, D.D., LL.D.,	New York City, 42 West 52d St.	Oct. 25, 1887.
REV. JOHN B. DRURY, D.D.,	New Brunswick,	Oct. 25, 1887.
REV. JAMES LE FEVRE, D.D.,	Middlebush,	June 16, 1888.
FREDERICK J. COLLIER, ESQ.,	Hudson, N. Y.,	June 16, 1891.
ALEXANDER T. VAN NEST, ESQ.,	New York City, 81 West 37th St.	June 16, 1891.
PAUL COOK, ESQ.,	Troy, N. Y.,	June 16, 1891.
DAVID MURRAY, PH.D., LL.D.,	New Brunswick,	March 1, 1892.
HON. GARRET D. W. VROOM,	Trenton,	June 21, 1892.
J. BAYARD KIRKPATRICK, ESQ.,	New Brunswick,	June 21, 1892.
*CHARLES T. VAN SANTVOORD, ESQ.,	New York City, 38 West 39th St.	March 7, 1893.
ROBERT SCHELL, ESQ.,	New York City, 33 West 56th St.	March 6, 1894.
GEORGE L. DANFORTH, ESQ.,	Middleburgh, N. Y.,	June 19, 1894.
REV. HENRY D'B. MULFORD,	Syracuse, N. Y.,	March 5, 1895.
WILLIAM H. LEUPP, ESQ.,	New Brunswick,	June 18, 1895.

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REV. DAVID D. DEMAREST, D.D., LL.D., . . . New Brunswick.  
*Secretary of the Board.*

FREDERICK FRELINGHUYSEN, ESQ., . . . Newark.  
*Treasurer of the Board.*

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#### STATED MEETINGS OF THE BOARD.

Last Tuesday in October, at 2 o'clock P. M.

First Tuesday in March, at 2 o'clock P. M.

Commencement Day, at 10.30 o'clock A. M.

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\* Died July 5th, 1893.

FACULTY.

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AUSTIN SCOTT, PH.D., LL.D.,  
PRESIDENT,

VOORHEES *Professor of History and Political Science.*  
24 Livingston Avenue.

REV. JACOB COOPER, DD., D.C.L., LL.D.,  
COLLEGIATE CHURCH *Professor of Logic and Mental Philosophy.*  
108 George Street.

REV. CARL MEYER, D.D.,  
*Professor of Modern Languages and Literatures.*  
245 Easton Avenue.

FRANCIS CUYLER VAN DYCK, PH.D.,  
*Professor of Physics and Experimental Mechanics.*  
84 College Avenue.

EDWARD ALBERT BOWSER, C.E., LL.D.,  
*Professor of Mathematics and Engineering.*  
Queen's College.

REV. CHARLES EDWARD HART, D.D.,  
*Professor of the English Language and Literature.*  
88 Livingston Avenue.

LOUIS BEVIER, JR., PH.D.,  
*Professor of the Greek Language and Literature.*  
*Secretary of the Extension Department.*  
Bishop Place.

EDGAR SOLOMON SHUMWAY, PH.D.,  
*Professor of the Latin Language and Literature.*  
211 Livingston Avenue.

ALFRED ALEXANDER TITSWORTH, M.S., C.E.,  
*Professor of Graphics and Mathematics.*  
590 George Street.

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## RUTGERS COLLEGE.

JULIUS NELSON, PH.D.,  
*Professor of Biology.*  
Adelaide Avenue, Highland Park.

✓ BYRON DAVID HALSTED, SC.D.,  
*Professor of Botany and Horticulture.*  
121 Livingston Avenue.

✓ JOHN BERNHARD SMITH, SC.D.,  
*Professor of Entomology.*  
45 Mine Street.

✓ EDWARD BURNETT VOORHEES, A.M.,  
*Professor of Agriculture.*  
83 Easton Avenue.

REV. WILLIAM RANKIN DURYEE, D.D.,  
THEODORE FRELINGHUYSEN *Professor of Ethics, Evidences of Christianity*  
*and the English Bible.*  
17 Union Street.

✓ ALBERT HUNTINGTON CHESTER, E.M., PH.D., SC.D.,  
*Professor of Chemistry and Mineralogy.*  
*Curator of the Museum.*  
35 College Avenue.

JOHN CHARLES VAN DYKE, L.H.D.,  
*Professor of the History of Art.*  
Seminary Campus.

✓ ROBERT WOODWORTH PRENTISS, M.S.,  
*Professor of Mathematics and Astronomy.*  
259 Handy Street.

ELIOT ROBERTSON PAYSON, PH.D.,  
*Professor of the History and Art of Teaching.*  
Hamilton Street.

✓ EDWARD LUTHER STEVENSON, PH.D.,  
*Professor of History.*  
139 New Street.

NEW

RUTGERS COLLEGE.

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✓ GEORGE BURWELL DAVIS, 1st LIEUTENANT, 4TH U. S. INFANTRY,  
*Professor of Military Science and Tactics.*  
192 College Avenue.

✓ IRVING STRONG UPSON, A.M.,  
*Librarian and Registrar.*  
*Secretary of the Faculty.*  
38 College Avenue.

CLARENCE LIVINGSTON SPEYERS, PH.B.,  
*Associate Professor of Chemistry.*  
64 College Avenue.

EDWARD LIVINGSTON BARBOUR,  
*Instructor in Elocution.*  
210 Townsend Street.

✓ WILLIAM SHIELDS MYERS, M.S., F.C.S.,  
*Instructor in Chemistry.*  
98 Easton Avenue.

✓ CHARLES EVERETT ADAMS, A.M., M.D.,  
*Instructor in Physical Training.*  
*Director of the Gymnasium.*  
Gymnasium.

EZRA FREDERICK SCATTERGOOD, B.S.,  
*Instructor in Mathematics, Electricity and Physics.*  
66 College Avenue.

EDWIN BELL DAVIS, B.L.,  
*Instructor in Modern Languages.*  
218 Baldwin Street.

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The names of the Faculty, after that of the President, are arranged in groups. The Professors, according to seniority of appointment; the Librarian and Registrar; the Associate Professors and Instructors, in the order of their respective appointments.

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

## CATALOGUE OF STUDENTS

FOR THE YEAR BEGINNING SEPTEMBER 18, 1895.

## SENIOR CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
HENRY WELLS BRINK,	Katabaan, N. Y.,	85 Hertzog Hall.
WILLARD CONGER,	New Brunswick,	83 Commercial Ave.
LANE COOPER,	New Brunswick,	108 George St.
ALFRED DEURY,	New Brunswick,	88 Livingston Ave.
JOHN LAWRENCE DURYEE,	Newark,	Zeta Psi House.
GEORGE SMOCK HOBART,	Marlboro,	Chi Phi House.
ARTHUR FREDERICK JENNINGS,	Plainfield,	Plainfield.
CHARLES GILBERT MALLERY,	Fishkill-on-Hudson, N. Y.,	39 Hertzog Hall.
EDWIN CORWIN MCKEAG,	New Brunswick,	233 Somerset St.
EDWARD JAY MEEKER,	Succasunna,	Delta U. House.
CHARLES SCUDDER POOL,	Somerville,	48 Winants Hall.
EDWARD TAYLOR RANDOLPH,	New Brunswick,	96 French St.
WILLIAM ADDISON RANNEY,	Cortland, N. Y.,	31 Hertzog Hall.
FRANCIS EDWARD TILTON,	Holmdel,	37 Hertzog Hall.
JOHN BROWNLEE VOORHEES,	New Brunswick,	140 Hamilton St.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
LOUIS DERBY AYRES,	Bayonne City,	Chi Psi Lodge.
JOSEPH GEORGE BAIER,	New Brunswick,	193 Neilson St.
WESLEY WARNER BURDEN,	New York City,	Delta U. House.
WILLIAM RYALL BURTIS,	Freehold,	Zeta Psi House.
CLARENCE WOODRUFF BYRAM,	Morristown,	48 Winants Hall.



<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
WILLIAM PIERSON CARTER,	Springfield,	Springfield.
WALTER KNICKERBOCKER CAVILEER,	Lower Bank,	107 Somerset St.
GEORGE DUNN CORNISH,	Gillette,	Chi Psi Lodge.
PAUL KIRK DOUGLAS,	Newark,	Newark.
ERKURIES BEATTY FITHIAN,	Bridgeton,	Chi Phi House.
ALFRED COOKMAN GREGORY,	Trenton,	Trenton.
SPENCER LITTLEFIELD HIGGINS,	Roselle,	Delta U. House.
WILLIAM ROGER HOGG,	Toms River,	85 Albany St.
LESTER INGLIS,	Paterson,	Chi Psi Lodge.
GEORGE ELBERT JACKSON,	Brooklyn, N. Y.,	Zeta Psi House.
THOMAS HERBERT LETSON,	New Brunswick,	Voorhees Station.
HERBERT ARTHUR LUSTER,	Elizabeth,	Elizabeth.
FRANK CONOVER MANLEY,	New Brunswick,	12 Easton Ave.
FRANK LEAMING MANNING,	Red Bank,	21 Winants Hall.
HENRY MARELLI,	Paterson,	187 Winants Hall.
BARTHOLOMEW FRANCIS MONAGHAN,	Newark,	Newark.
GEORGE SHELDON MOWER,	Newark,	85 Easton Ave.
JAMES BRYAN NOE,	Elizabeth,	Elizabeth.
GEORGE WINFIELD NUTTMAN,	Newark,	Chi Psi Lodge.
WILLIAM O'CONNOR,	Paterson,	24 Codwise Ave.
CULLEN WARNER PARMELEE,	Ocean Grove,	Beta Theta Pi House.
ROBERT MATTHEWS PIERSON,	Elizabeth,	Elizabeth.
JOHN FRANCIS POST, JR.,	Riverdale,	Beta Theta Pi House.
CHARLES ANSON POULSON,	Mendham,	Beta Theta Pi House.
IRVING LEE REED,	Mount Holly,	Chi Phi House.
ALLISON BURTON ROOME,	Butler,	Delta U. House.
WALDO BERTH ROSENCRANTZ,	Cranford,	Cranford.
HENRY DE WITT TREMPER,	Kingston, N. Y.,	Chi Psi Lodge.
GABRIEL VAN CLEVE,	Paterson,	Chi Psi Lodge.
WILLIAM VAN BERGEN VAN DYCK,	New Brunswick,	84 College Ave.
HOWARD EDWARD VAN NESS,	Little Falls,	87 Winants Hall.
ROBERT BRADSHAW WHITAKER,	New Brunswick,	109 Winants Hall.
HOWARD EDMUND WHITE,	Trenton,	85 Albany St.
MILLER ROYAL WHITENACK,	Newark,	Newark.
JOHN ALFRED WILSON,	Dunellen,	114 Bayard St.
GUSTAV FREDERICK WITTIG,	New Brunswick,	16 Hardenbergh St.
HERBERT WYCKOFF,	Freehold,	21 Winants Hall.
JESSE FREDERICK ZABRISKIE,	Cherry Hill,	108 Winants Hall.

## JUNIOR CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
CLIFFORD PHILIP CASE,	New Brunswick,	Hertzog Hall.
WILLIAM GURLEY COOK,	Troy, N. Y.,	Bleecker Place.
FRANK HAMILTON DOBSON,	Bayonne City,	Chi Psi Lodge.
RICHARD LOUNSBERY ELTINGE,	Kingston, N. Y.,	Delta U. House.
ALFRED ERICKSON,	New Brunswick,	Highland Park.
ANDREW WYCKOFF HAGEMAN,	Belleville,	Delta U. House.
CHARLES MEEKS MASON,	Newark,	Newark.
ANDREW JOHN MEYER,	Albany, N. Y.,	Chi Phi House.
LOUIS PROVOST PERKE,	East Millstone,	Delta U. House.
JOSEPH SCUDDER,	New Brunswick,	Delta Phi House.
FRANCIS AUGUSTUS SEIBERT,	Garfield,	51 Hertzog Hall.
CHARLES WILLARD VOORHEES,	Middlebush,	Zeta Psi House.
ANDREW JUDSON WALTER,	Tradesville, Pa.,	10 Hertzog Hall.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JAMES EDWARD ASHMEAD,	Pleasantville,	162 New St.
GEORGE WASHINGTON BROWN,	Keyport,	105 Winants Hall.
JOHN NEILSON CARPENDER, JR.,	New Brunswick,	George St.
RAYMOND VAN ARSDALE CARPENTER,	Plainfield,	25 Hertzog Hall.
MORRISON CROSBY COLYER,	Newark,	Chi Psi Lodge.
RALPH BREWSTER CORBIN,	Metuchen,	Delta Phi House.
GERARD JOHN DIEHL,	Passaic,	35 Albany St.
GEORGE STANLEY FERGUSON,	Ocean Grove.	126 Winants Hall.
THOMAS EZEKIEL GRAYATT,	Clarksburgh,	College Farm.
HUGH HADDOW, JR.,	Newark,	Newark.
SAMUEL LAWRENCE HARDING,	Bridgeton,	Chi Phi House.
GEORGE EDDY HEATH,	New Brunswick,	99 Easton Ave.
CHARLES LIPPINCOTT HOOPES,	Haddonfield,	35 Easton Ave.
LEWIS GASTON LEARY,	Elizabeth,	Elizabeth.
SEYMOUR DE WITT LUDLUM,	Paterson,	358 George St.
JOHN MAHLON MILLS,	Morristown,	62 Winants Hall.
WILLIAM JAMES MORRISON, JR.,	Ridgefield Park,	Delta Phi House.
GEORGE AUGUSTUS OSBORN,	Ocean Grove,	Beta Theta Pi House.
RALPH BREWSTER PARROTT,	Schoharie, N. Y.,	Delta Phi House.
HOWARD EGBERT REID,	Smithburgh,	College Farm.
ALBERT ROSE RIGGS,	Milton,	Chi Phi House.
FREDERIC FREDERIC ROEBER,	Newark,	Newark.
PAUL SCHUREMAN,	Toms River,	35 Albany St.
WILLIAM UNGER SMALL,	Newark,	Newark.
EDGAR DE MOTT STRYKER,	Raritan,	102 Winants Hall.
WILLIAM SUTHERLAND,	Jersey City,	Delta Phi House.
JAMES EATON TORREY,	Montclair,	11 Winants Hall.
HENRY LUDWIG ULRICH,	Newark,	Newark.
JOHN STANLEY VERGA,	Camden,	61 Winants Hall.

## SOPHOMORE CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
CHARLES FREDERICK BENJAMIN, JR.,	Fishkill, N. Y.,	43 Hertzog Hall.
JOHN BLACK,	Schodack Depot, N. Y.,	24 Hertzog Hall.
EDWARD DAWSON,	Walden, N. Y.,	16 Hertzog Hall.
FLOYD DECKER,	Newton,	20 Hertzog Hall.
HENRY RICHARD DE WITT,	Glasco, N. Y.,	Delta U. House.
FRANCIS KEENE WYNKOOP DEURY,	New Brunswick,	88 Livingston Ave.
GEORGE HARRINGTON,	Warsaw, N. Y.,	114 Bayard St.
JOHN ALBERT LIGGETT, JR.,	Rahway,	Rahway.
EDWARD GODFRED WALTER MEURY,	Brooklyn, N. Y.,	48 Hertzog Hall.
KING STICKLE ORAM,	Rockaway,	Chi Phi House.
GEORGE TODD VAULES,	Rahway,	Rahway.
ROBERT THOMAS WILSON,	Bayonne,	33 Hertzog Hall.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
BENJAMIN STEELMAN CHAMPION,	Ocean City,	114 Bayard St.
JAMES COLLINS,	Freehold,	144 Welton St.
DAVID ABRAHAM CONOVER,	New Brunswick,	Raritan Landing.
JOHN FINLEY DRAKE,	Mendham,	132 Winants Hall.
RAYMOND GULICK,	Middletown,	144 Welton St.
JOHN BRANDON GUTHRIE,	Englewood,	Zeta Psi House.
GEORGE HUTCHINSON,	New Brunswick,	Three Mile Run.
WILLIAM EDWARD KELLY, JR.,	New Brunswick,	135 Welton St.
JACOB KOTINSKY,	Woodbine,	College Farm.
JACOB GOODALE LIPMAN,	Woodbine,	College Farm.
WILLIAM ALLEN MESSLER,	Allentown,	114 Bayard St.
ARTHUR EDMUND OWEN,	Montclair,	Montclair.
RICHARD SEBASTIAN PEARSE,	Brooklyn, N. Y.,	18 Hertzog Hall.
ALBION EVERETT PREBLE,	Atlantic City,	114 Bayard St.
CORYDON MOTT RYNO,	Benton Harbor, Mich.,	52 Oliver St.
CHARLES VERNON SMITH,	South Seaville,	132 Winants Hall.
LYMAN MILLER SMITH,	Dover,	Chi Psi Lodge.
LOUIS ULRICH STRASSBURGER,	New Brunswick,	99 Easton Ave.
WILLIAM PITMAN CORBETT STRICK- LAND, JR.,	New Brunswick,	263 Suydam St.
WAYNE HUBERT THOMPSON,	New Brunswick,	102 Winants Hall.
JOHN JERVIS VAIL,	Rahway,	Rahway.
ELLIOTT EARLE VAN CLEEF,	New Brunswick,	94 Albany St.
HAVERLOCK WALSER,	West Brighton, N. Y.,	Zeta Psi House.
EDMUND OLIVER WOOD,	Bordentown,	Bordentown.
JACOB WYCKOFF,	Tokyo, Japan,	224 Handy St.

## FRESHMAN CLASS.

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 Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
SAMUEL MILLS CUDDERBACK.	Port Jervis, N. Y.,	30 Winants Hall.
GEORGE W. ECKER,	Albany, N. Y.,	22 Hertsg Hall.
WELLINGTON FOCKMAN FRANCHCO,	Caldwell,	41 Hertsg Hall.
PAUL FRED GRIETANER,	Newark,	Newark.
WILLIAM REESE HART,	Neshanic,	45 Hertsg Hall.
JAMES MACDONALD MARTIN,	East Orange,	147 College Ave.
WILLIAM FRANKLIN PLUMLEY,	Dayton.	Dayton.
AUGUSTUS HUNT SHEARER,	Philadelphia, Penn.,	38 College Ave.
ISAAC EDWARD TIDSWORTH,	Dunellen,	500 George St.
DAVID CRAWFORD WEIDNER,	West Shokan, N. Y.,	141 Welton St.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
HENRY WESTERVELT BANTA,	Hackensack,	105 Winants Hall.
HAMLET PAUL COLLINS,	New Brunswick,	282 Redmond St.
WILLIAM ABNER CORIELL,	New Brunswick,	300 George St.
HAROLD THOMAS EDGAR,	Metuchen,	Metuchen.
CARL HENRY HERMAN FISCHER,	Newark,	Newark.
THEODORE CHRISTIAN FISCHER,	Elizabeth,	Elizabeth.
CLARENCE GARRETTSON,	Somerville,	124 Winants Hall.
THOMAS AQUINAS GERRETY,	New Brunswick,	41 Stone St.
WILLIAM ALOYSIUS GROWNEY,	Perth Amboy.	Perth Amboy.
WILLIAM LAWRENCE ROSS HAINES,	Newark,	58 Winants Hall.
WILLIAM EDWARD HELMSTAEDTER,	Newark,	Newark.
VINCENT MOORE IRICK,	Vincenttown,	114 Bayard St.
HARRY LOUIS MARKER,	Newark,	Newark.
JOHN WYCKOFF METTLER,	East Millstone,	East Millstone.
JOHN SPENCER OSBORNE,	Belleville,	Belleville.
DUDLEY DIGGES FLEMMING PARKER,	Jersey City,	Jersey City.
LOUIS JACOB QUAD,	New Brunswick,	56 Dennis St.
BENJAMIN ROSENBLOOM,	Newark,	142 Church St.
Cecil METCALFE ROSS,	Hackensack,	90 Winants Hall.
LAURANCE PHILLIPS RUNYON,	New Brunswick,	14 Union St.
EDGAR HARVEY SABLES,	Stelton,	Stelton.
CLAUDE EDWARD SCATTERGOOD,	Newark,	Newark.
JOHN WALLACE THOMPSON,	Morristown,	114 Bayard St.
HAROLD NEWELL VAN BERGEN,	Elizabeth,	Elizabeth.
FREDERICK GEORGE VON GEHREN,	Newark,	97 Winants Hall.
FREDERICK CHRISTOPHER WACKENHUTH,	Newark,	99 Winants Hall.
HENRY JANEWAY WESTON,	New Brunswick,	17 Livingston Ave.
CHARLES EDWARD WHITLOCK,	New Brunswick,	54 Baldwin St.
FREDERICK HINSDALE WINN,	New Brunswick,	102 Winants Hall.

## SPECIAL STUDENTS.

NOT CANDIDATES FOR A DEGREE.

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<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
FREDERICK HARVEY BLODGETT, <i>Sciences.</i>	Washington, D. C.,	96 Albany St.
WILLARD PARKER CLARK, <i>Sciences.</i>	New Brunswick,	89 Bayard St.
ROBERT WILLIAM COURTNEY, <i>Classics.</i>	New York City,	Beta Theta Pi House.
BERGEN DAVIS, <i>Sciences.</i>	White House Station,	Delta U. House.
WILSON WARREN FOWLER, <i>Sciences.</i>	New Brunswick,	430 George St.
CHESTER HARTRANFT TAPPING, <i>Sciences.</i>	New Brunswick,	57 Schureman St.

## SUMMARY.

	Classical.	Scientific.	Total.
Seniors.....	15	43	58
Juniors .....	13	29	42
Sophomores.....	12	25	37
Freshmen .....	10	29	39
Special Students.....	1	5	6
Totals.....	51	131	182



## CLASSICAL ' DEPARTMENT.

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**I. ADMISSION.**

Every applicant for admission must be at least sixteen years of age, and must submit to the President proper testimonials of a good moral character.

**EXAMINATIONS AT THE COLLEGE.**—Examinations for admission will be held on the Friday and Saturday preceding Commencement week, June 12th and 13th, 1896, beginning at 10 o'clock A. M. on Friday, in the Registrar's office. Applicants may also be examined on Tuesday, September 15th, at the same hour and place. Students are advised to be present for examination in June.

It is expected that students who present themselves will be prepared, by careful study and by reviews of their work, to pass successfully a thorough examination on the subjects which are required.

Only such students are admitted with conditions as are, in the opinion of the examiners, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class.

Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that all entrance conditions will be made up before the Thanksgiving recess.

**CERTIFICATES.**—From certain preparatory schools of approved standing students are admitted to the Freshman Class upon the full certificate of the Principal.

Upon the request of the Principal or Board of Education, the Faculty will appoint a committee to visit any school and to report upon its condition.

The schools which shall be approved by the Faculty upon the report of this committee shall be entitled, for a period of three years, to the privilege of admission upon full certificate for their students, to the Department for which they were prepared.

Blank forms of certificate for admission will be furnished to the Principal of an approved school upon application to the Registrar.

The certificate, when properly filled out, should be forwarded to the Registrar before the day fixed for the examination for admission in June of each year.

**ADVANCED<sup>\*</sup> STANDING.**—Students may enter advanced classes either at the beginning of the College year or at other times, if they sustain a satisfactory examination both on the preliminary studies and on those already passed over by the class which they propose to enter. Full equivalents will be accepted.

**SPECIAL STUDENTS.**—In exceptional cases students properly prepared for admission to the Freshman Class may, by special vote of the Faculty, be permitted to pursue select branches of study. Such students are required to take examinations and all work in Composition and Elocution with the class with which they have studied.

**SLOAN PRIZES FOR THE BEST ENTRANCE EXAMINATIONS,  
CLASSICAL COURSE.**

A FIRST PRIZE OF ONE HUNDRED DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills; and a SECOND PRIZE OF FIFTY DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills, established in 1883 by Hon. Samuel Sloan, of New York, a member of the Board of Trustees, will be awarded to the students who shall be adjudged by the examiners to have passed the best examination among the applicants for admission to the Freshman Class, in 1896. The cash prizes will be awarded, one-half at matriculation and one-half at the end of the second term of the Freshman year. The scholarship funds will be applied to cancel term bills for tuition during the course, and will be forfeited if the student's general average on the work of the year falls below 80 on a scale of 100.

Free scholarships may be given to young men of improved character and ability, whose family circumstances are such as to make assistance necessary. No deserving student who has shown perseverance and capacity is allowed to give up his course for lack of this assistance.

## REQUIREMENTS FOR ADMISSION.

The following, or a full equivalent, are the requirements for admission to the Freshman Class:

## 1. LATIN.

GRAMMAR, Allen-Greenough-Kittredge, Andrews-Stoddard-Preble, Bennett, Gildersleeve-Lodge, or Harkness. The Roman system of pronunciation. Correctness in quantities is essential.

COMPOSITION, Jones, or forty-four lessons of Arnold-Mulholland. The candidate should have had constant exercise in writing Latin prose. Frequent oral exercises in rendering into Latin are earnestly recommended.

CÆSAR, four books of the *Gallie War*, or an equivalent amount of Cæsar's *Civil War*, or of Cornelius Nepos.

CICERO, six *Orations* (including the *Catilinarian*), and Sallust's *Catline*, or if Sallust be omitted, nine *Orations*.

VERGIL, six books of the *Æneid*, with scansion, or five books of the *Æneid* with the *Eclogues*.

EQUIVALENTS may be substituted freely.

When the student elects to take the College examinations (instead of offering a preparatory school certificate), readiness and accuracy in "sight" translation, "sight" composition and "anticipatory" parsing will be allowed credits to offset quantitative deficiency.

HISTORY AND GEOGRAPHY; knowledge of the main facts of the Regal and Republican periods (Allen's *Short History of the Roman People* is approved); ability to map Italy, Gaul and Spain.

## 2. GREEK.

GREEK GRAMMAR entire; Goodwin's, or Hadley and Allen's.

XENOPHON'S ANABASIS, three books.

HOMER'S ILIAD, three books (omitting the catalogue of the ships), or Homer's Odyssey, three books. Particular care should be given to scansion. SIGHT READING. Students will be tested in reading easy Greek prose not included in the above.

PROSE COMPOSITION, Jones', or Collar and Daniell's, or Woodruff's.

GREEK HISTORY and Geography, Smith's *Smaller History of Greece*, or an equivalent, and a sufficient knowledge of Ancient Geography to enable the student to locate correctly the more important cities of Greece and the Asiatic coast, and to draw a general outline of the coast, placing the chief islands of the *Ægean Sea*.

The above statements indicate the amount of work presupposed by the entrance examinations, but results are more important than the pages covered, and a free substitution of equivalents is allowed.

In preparing for the Greek course too much prominence cannot be given to a careful drill in composition. In no other way can the Grammar be so easily mastered, particularly the laws of accent.

In pronunciation the accent must be followed in prose, while preserving the correct quantities; but in poetry regard will be had only to quantity.

### 3. MATHEMATICS.

ARITHMETIC complete, including the Metric System.

Fundamental operations; Common and Decimal Fractions; Percentage; Proportion; Square and Cube Root.

A practical knowledge of the Metric System of Weights and Measures is indispensable, since it is used in the class-room.

ALGEBRA, through Quadratic Equations, including Radicals; or the first fifteen chapters of Bowser's College Algebra, or an equivalent.

Attention is especially called to the *essential importance of a thorough preparation in the elements of Algebra*, on which subsequent success in Mathematics depends. The students should be thoroughly drilled in the fundamental operations of addition, subtraction, multiplication and division, in the use of negative and fractional exponents, in factoring and in involution and in evolution. He should be able to solve readily simple and quadratic equations. It is earnestly recommended that the student be required to solve numerous and varied examples, and to explain them verbally, with clearness, *giving the reasons for the successive steps*. It is desirable also to cultivate habits of neatness and order in the presentation of work on the black-board or paper.

PLANE GEOMETRY, four books of Bowser's, or an equivalent, *including Exercises*. Careful attention should be given to the *Exercises* in Geometry, as they greatly aid in acquiring readiness in geometrical reasoning.

### 4. THE ENGLISH BRANCHES.

ENGLISH GRAMMAR.

SPELLING.

A SHORT ENGLISH ESSAY is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1896, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Shakespeare's *Twelfth Night*; the *Sir Roger de Coverley Papers* in *The Spectator*; Irving's *Sketch Book*; Scott's *The Abbot*; Webster's *First Bunker Hill Oration*; Macaulay's *Essay on Milton*; Longfellow's *Evangelist*.

In 1897, the examination will be upon Shakespeare's *As You Like It*; Defoe's *History of the Plague in London*; Irving's *Tales of a Traveler*; Hawthorne's *Twice Told Tales*; Longfellow's *Evangeline*; George Eliot's *Silas Marner*.

The following books are set apart for examination upon subject-matter, form and structure, 1897: Shakespeare's *The Merchant of Venice*; Burke's *Speech on Conciliation with America*; Scott's *Marmion*; Macaulay's *Life of Samuel Johnson*.

HISTORY OF THE UNITED STATES (Johnston's History of the United States).

Candidates for admission are examined in the History of the United States, with special reference to the colonization of the several States, the forms of government which existed previous to the War for Independence, the causes and principal events of that war, the period of the Confederation, the establishment of the Federal Constitution, with the general history subsequent to that event.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

DESCRIPTIVE GEOGRAPHY.

PHYSICAL GEOGRAPHY.

#### 5. MODERN LANGUAGES.

GERMAN OR FRENCH.—Either German or French may be offered at the option of the applicant. In either case he must show a good knowledge of the elements of grammar, ability to pronounce correctly, and acquaintance with the commonest irregular verbs. Grammars recommended are Whitney's Brief German Grammar, Joynes-Meissner's German Grammar for Schools and Colleges, or Grandgent's Short French Grammar and Whitney's Brief French Grammar.

## 2. COURSES OF STUDY.

The complete College course occupies four years, each year consisting of three terms.

All the studies of the Freshman and Sophomore years, and certain subjects of the Junior and Senior years, are prescribed for all candidates for a degree. These prescribed studies are intended to furnish the sound basis of a liberal education, whatever career or profession may be chosen.

The other studies of the Junior and Senior years are arranged in elective courses in accordance with a recent careful revision of the curriculum. These elective courses are designed not only to carry further the general training of the student in the liberal arts, but to fit him for the special occupation or profession which he proposes to follow.

The student is required to make his choice at the end of the Sophomore year, and the elective courses then chosen are to be pursued in connection with the prescribed studies throughout the last two years.

The following is a scheme of the studies of the prescribed and elective courses. While it is subject to change in details, it exhibits the amount of work required of students during the four years and indicates to candidates for advanced standing the equivalents which will be accepted from them :

In the following schedule the numerals at the right indicate the number of morning hours each week. Exercises throughout the four years in Composition, Declamation and Extempore Speaking. Bible Class (optional) and Sermon each Sunday morning. Physical Training four times a week during the first two years.

## FRESHMAN CLASS.

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. LATIN.—Cicero, De Amicitia; Oral and Written Composition.....	4
2. GREEK.—Homer's Odyssey; Prose Composition.....	4
3. MATHEMATICS.—Bowser's Algebra, from Chapter XVII.....	4
4. ENGLISH LITERATURE.—History of the English Language, Lounsbury; Chaucer. Private Reading: Lamb's Tales of Shakespeare, three plays of Shakespeare, first two books of Paradise Lost .....	2
5. PHYSIOLOGY.—Comparative Biology; Lectures.....	1
6. CIVICS.....	1

## SECOND TERM, THIRTEEN WEEKS.

1. LATIN.—Livy; Horace, Odes; Composition; Latin Synonymes.....	5
2. GREEK.—Selections from Herodotus and Xenophon; Prose Compo- sition .....	5
3. MATHEMATICS.—Bowser's Algebra, completed; Bowser's Geometry....	3
4. RHETORIC.—Clark; Lectures; Essays .....	2
5. ZOOLOGY.—Orton's Comparative Anatomy; Lectures.....	1

## THIRD TERM, TEN WEEKS.

1. LATIN.—Horace; Odes, Epodes, Satires.....	4
2. GREEK.—Lysias; Prose Composition.....	4
3. MATHEMATICS.—Bowser's Geometry, completed.....	4
4. BOTANY.—Gray .....	2
5. ENGLISH LITERATURE.—History of English Literature; Pancoast's Representative English Literature.....	2



SOPHOMORE CLASS.

FIRST TERM.

Hours a week.

1. LATIN.—Pliny's Letters; Tacitus, Agricola.....	3
2. GREEK.—Selections from Plato; Prose Composition.....	3
3. INORGANIC CHEMISTRY.—Lectures, with Experiments, Remsen.....	4
4. MATHEMATICS.—Bowser's Plane and Spherical Trigonometry.....	3
5. GERMAN.—Joyne-Melsner's German Grammar; Storm's Immensee; Freytag's Die Journalisten; sight reading.....	3

SECOND TERM.

1. LATIN.—Tacitus, Selections from Annales and Historiae.....	3
2. GREEK.—Demosthenes on the Crown; Æschines against Ctesiphon; Prose Composition.....	3
3. MATHEMATICS.—Bowser's Analytic Geometry.....	3
4. HISTORY.—Myers' Mediæval and Modern History.....	4
5. GERMAN.—German Lyric Poetry; Prose Composition; sight reading..	3

THIRD TERM.

1. LATIN.—Terence or Plautus; Catullus.....	3
2. GREEK.—Aristophanes' Birds or Clouds; Prose Composition.....	3
3. MATHEMATICS.—Bowser's Analytic Geometry.....	3
4. HISTORY.—Myers' Mediæval and Modern History.....	4
5. GERMAN.—Goethe's Hermann and Dorothea; Prose Composition; sight reading.....	3

## JUNIOR CLASS.

## PRESCRIBED STUDIES.

## FIRST TERM.

Hours a week.

- |  |   |
|--|---|
| 1. FRENCH.—Grandgent's French Grammar; Grandgent's Lessons and Exercises; Berthel's Pacte de Famille; Labiche's Voyage de M. Perrichon; sight reading.....   | 3 |
| 2. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Science; Schwegler's History of Philosophy, Stirling's Edition; Essays on Metaphysical Subjects..... | 5 |
| 3. PHYSICS.—Ganot; Lectures.....   | 2 |

## SECOND TERM.

- |  |   |
|--|---|
| 1. FRENCH.—Molière's L'Avare; Racine's Phèdre; Prose Composition; sight reading..... | 3 |
| 2. LOGIC.—Fowler's Logic.....  | 2 |
| 3. PHYSICS.—Ganot; Lectures.....   | 2 |
| 4. ASTRONOMY.—Young's Elements.....  | 3 |

## THIRD TERM.

- |  |   |
|--|---|
| 1. FRENCH.—Lamartine's Graziella; Hugo's Ruy Blas; Prose Composition; sight reading..... | 3 |
| 2. PHYSICS.—Ganot; Lectures.....   | 2 |
| 3. HISTORY OF CIVILIZATION.....  | 5 |

## SENIOR CLASS.

## PRESCRIBED STUDIES.

## FIRST TERM.

- |  |   |
|--|---|
| 1. POLITICAL ECONOMY.—Walker and Perry; Lectures; Essay..... | 4 |
| 2. GEOLOGY.—Dana.....  | 3 |
| 3. FINE ARTS.—Lectures.....                                  | 1 |

## SECOND TERM.

- |  |   |
|--|---|
| 1. CONSTITUTIONAL LAW.—Cooley; Lectures.....             | 4 |
| 2. ETHICS.—English Bible; Evidences of Christianity..... | 3 |
| 3. FINE ARTS.—Lectures.....                              | 1 |

## THIRD TERM.

- |                                     |   |
|-------------------------------------|---|
| 1. INTERNATIONAL LAW.—Lectures..... | 4 |
| 2. PRACTICAL ETHICS.....            | 2 |
| 3. MINERALOGY.....                  | 2 |
| 4. PEDAGOGY.—Lectures.....          | 1 |

# JUNIOR AND SENIOR CLASSES.

## ELECTIVE STUDIES.

At the end of the Sophomore year choice is made of two elective courses, which are then pursued throughout the Junior and Senior years, in addition to the prescribed schedule of studies. Changes are not allowed after the beginning of the Junior year. The following are the elective courses offered :

- |                    |                 |                                       |
|--------------------|-----------------|---------------------------------------|
| 1. Latin.          | 4. German.      | 7. Chemistry. { a. Physics.           |
| 2. Greek.          | 5. Mathematics. | 8. History. { b. Mineralogy, Geology. |
| 3. English-French. | 6. Biology.     | 9. Philosophy.                        |

Students choosing the English-French Course may pursue English during the Junior and Senior years, or English during the Junior year, with French during the Senior year.

The Course in Biology includes Zoology, Botany and Entomology.

Students choosing Chemistry may take Chemistry during the Junior year, with Physics during the Senior year, or Chemistry during the Junior year, with Mineralogy and Geology during the Senior year.

Students taking the Course in Philosophy may pursue Mental Philosophy throughout the Junior and Senior years, or Mental Philosophy throughout the Junior year, with Moral Philosophy throughout the Senior year.

The recitation schedule will be arranged so as to allow the following combinations of elective courses :

- |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 with 2. | 1 with 3. | 2 with 7. | 4 with 5. | 4 with 9. | 6 with 7. |
| 1 with 3. | 1 with 9. | 2 with 9. | 4 with 6. | 5 with 6. | 6 with 8. |
| 1 with 5. | 2 with 8. | 3 with 4. | 4 with 7. | 5 with 7. | 7 with 8. |
| 1 with 6. | 2 with 4. | 3 with 5. | 4 with 8. | 5 with 9. | 8 with 9. |
| 1 with 7. | 2 with 6. | 3 with 8. |           |           |           |

## ELECTIVE COURSES.

## 1. COURSE IN LATIN.

	JUNIOR YEAR.	Hours a week.
FIRST TERM.—Roman Rhetoric and Education; Quintilian, Tacitus, et al.....		3
SECOND TERM.—Roman Philosophy; Lucretius, Seneca, Cicero.....		3
THIRD TERM.—Early Latin; Bruns, <i>Fontes Iuris Romani</i> .....		3

## SENIOR YEAR.

FIRST TERM.—Roman Law; Krüger-Mommsen-Studemund, <i>Collectio Librorum Iuris Antiquissimi</i> .....	4
SECOND TERM.—Roman Law; The Institutes of Justinian, edited as a Recension of the Institutes of Gaius by T. E. Holland.....	4
THIRD TERM.—Roman Law; The Digest; Introduction to Justinian's Digest, Roby; Selected Titles, Holland and Shadwell.....	4

## 2. COURSE IN GREEK.

## JUNIOR YEAR.

FIRST TERM.—Thucydides and Other Historians.....	3
SECOND TERM.—Attic Orators, Selected Orations.....	3
THIRD TERM.—Selections from the Lyric Poets .....	3

## SENIOR YEAR.

FIRST TERM.—Sophocles and Æschylus or Euripides.....	4
SECOND TERM.—Plato's Republic; Aristotle's Metaphysics.....	4
THIRD TERM.—Lucian .....	4

## 3. COURSE IN ENGLISH-FRENCH.

## JUNIOR YEAR.

FIRST TERM.—Poetics; Literary Criticism.....	3
SECOND TERM.—The Elizabethan Poets, including Milton.....	3
THIRD TERM.—The English Drama; Shakespeare's Predecessors and Contemporary Dramatists; special studies in Shakespeare.....	3

## SENIOR YEAR.

FIRST TERM.—a. English—History of English Prose, Lectures; English Prose authors, Minto.....	4
b. French—French Poetry with special reference to that of the Nineteenth Century; Lectures; Private Reading.	

Hours a week.

<b>SECOND TERM.</b> —a. English.—Eighteenth Century Poets, and Poets of the Romantic Revival.....	4
b. French.—French Drama; Lectures; Private Reading.....	4
<b>THIRD TERM.</b> —a. English.—Sweet's Anglo-Saxon Primer; Bright's Anglo-Saxon Reader.....	4
b. French.—French Prose, the Novel and Novelette; Lectures; Private Reading.....	4

4. COURSE IN GERMAN.

JUNIOR YEAR.

<b>FIRST TERM.</b> —Wilhelm Tell, or another play of Schiller; German Prose Composition and Conversational German throughout the Junior and Senior years.....	8
<b>SECOND TERM.</b> —Faust, Part I., or another play of Goethe.....	8
<b>THIRD TERM.</b> —Minna von Barnhelm, or another play of Lessing.....	8

SENIOR YEAR.

<b>FIRST TERM.</b> —German Literature. Scherer, with lectures. The classroom work will be conducted entirely in German during the Senior year.....	4
<b>SECOND TERM.</b> —Middle High German; Grammar; The Niebelungen Lied.....	4
<b>THIRD TERM.</b> —Sight Reading of the German Lyric Poetry, with German Essays in Literary criticism.....	4

5. COURSE IN MATHEMATICS.

JUNIOR YEAR.

<b>FIRST TERM.</b> —Analytic Geometry, completed; Differential Calculus, Bowser.....	8
<b>SECOND TERM.</b> —Differential and Integral Calculus, Bowser.....	8
<b>THIRD TERM.</b> —Higher Mathematics.....	8

SENIOR YEAR.

<b>FIRST TERM.</b> —a. Higher Mathematics.....	4
b. Practical Astronomy; Observatory Work.....	4
<b>SECOND TERM.</b> —a. Higher Mathematics.....	4
b. Practical Astronomy; Observatory Work.....	4
<b>THIRD TERM.</b> —a. Higher Mathematics.....	4
b. Practical Astronomy; Observatory Work.....	4

## 6. COURSE IN BIOLOGY.

## JUNIOR YEAR.

## Hours a week.

FIRST TERM.—General Biology.....	3
SECOND TERM.—Invertebrate Zoology; Vegetable Histology.....	3
THIRD TERM.—Botany and Entomology.....	3

## SENIOR YEAR.

FIRST TERM.—Systematic Entomology; Vertebrate Anatomy.....	4
SECOND TERM.—Vegetable Physiology; Mammalian Anatomy and Histology.....	4
THIRD TERM.—Botany and Entomology.....	4

7. COURSE IN CHEMISTRY.—{ a. Physics.  
b. Mineralogy, Geology.

## JUNIOR YEAR.

FIRST TERM.—Experimental Chemistry; Blowpipe Analysis.....	3
SECOND TERM.—Qualitative Analysis .....	3
THIRD TERM.—Qualitative Analysis, completed; Quantitative Analysis, .....	3

## SENIOR YEAR.

FIRST TERM.—a. Physics.—Mechanics; Light; Laboratory Practice.....	4
b. Mineralogy and Geology.....	4
SECOND TERM.—a. Physics.—Heat; Electricity; Laboratory Practice....	4
b. Mineralogy and Geology.....	4
THIRD TERM.—a. Physics.—Electricity; Sound; Laboratory Practice....	4
b. Mineralogy and Geology.....	4

## 8. COURSE IN HISTORY.

## JUNIOR YEAR.

FIRST TERM.—The Periods of the Renaissance and the Reformation.....	3
SECOND TERM.—The Periods of the Renaissance and the Reformation..	3
THIRD TERM.—English Constitutional History.....	3

## SENIOR YEAR.

FIRST TERM.—Critical Study of American History, Reports upon current Historical and Economic Literature.....	4
SECOND TERM.—Critical Study of American History, continued; Comparative Study of Modern Constitutions; Reports upon current Historical and Economic Literature.....	4
THIRD TERM.—Comparative Study of Modern Constitutions; Reports upon current Historical and Economic Literature.....	4

9. COURSE IN PHILOSOPHY.

(A choice will be made from time to time on the following basis.)

JUNIOR YEAR.

	Hours a week.
<b>FIRST TERM.</b> —Schwegler's History of Philosophy, Stirling's Edition; Porter's Elements of Psychology, continued; Aristotle's Metaphysics.....	3
<b>SECOND TERM.</b> —Fowler's Logic—Deductive; Schwegler's History of Philosophy; Aristotle's Metaphysics; Paulsen's Introduction to Philosophy.....	3
<b>THIRD TERM.</b> —Davis' Theory of Thought; Schwegler's History of Philosophy; Hegel's Logic, Harris' translation; Aristotle's Metaphysics.....	3

SENIOR YEAR.

<b>FIRST TERM.</b> — <i>a.</i> Mental Philosophy.—Mansel's Metaphysics; Ueberweg's History of Logic and Logical Doctrines; Parts of Plato's Republic and Parmenides; Leibnitz's New Essays, English translation.....	4
<i>b.</i> Moral Philosophy.—Butler's Analogy.....	4
<b>SECOND TERM.</b> — <i>a.</i> Mental Philosophy.—Mansel's Metaphysics; Ueberweg's History of Logic and Logical Doctrines; Aristotle's Analytics; Paulsen's Introduction to Philosophy.....	4
<i>b.</i> Moral Philosophy.—Calderwood's Hand-Book of Moral Philosophy.....	4
<b>THIRD TERM.</b> — <i>a.</i> Mental Philosophy.—Berkeley's Principles of Science; Jevons' Principles of Science; Aristotle's Topics.....	4
<i>b.</i> Moral Philosophy.—Calderwood's Hand-book of Moral Philosophy.....	4

## DESCRIPTION OF THE COURSES OF STUDY.

## LATIN LANGUAGE AND LITERATURE.

In the prescribed work, the student is aided in mastering the language of the chief writers of the Republic and early Empire. In the elective work, early Latin and that of the later Empire are also studied.

The meaning of the word is fixed by inspecting its derivation and by comparing it with its synonymes and opposites. The sentence is studied analytically, with close attention to the value and disposition of phrases and clauses. Composition, partly systematic and partly based on the text read, is practiced in set written and oral exercises; and Latin questions, with extemporaneous answers in Latin, are employed according to the progress of the student, that by induction and practice he may gain a ready accuracy in the Latin tongue.

His attention is called to the differences in diction and syntax of the various authors, and, as he grows more familiar with the language, he is led to examine more critically the author's literary characteristics. The following representatives of the Republic and earlier Empire are read in the required work of six terms: Plautus or Terence, Cicero, Catullus, Livy, Horace, Tacitus and the younger Pliny.

The elective study is intended not only to add to the student's knowledge of the historical development of the language, but especially to broaden his comprehension of its literature. As he should now be able to appreciate the content of the literature as well as its form, the arrangement of the elective work looks to the relative importance



of the subject-matter of the text, with especial regard to the needs of future teachers and lawyers and of students of history. While other lines have sometimes been taken up, on the unanimous wish of the class, the arrangement given below is preferred and is designed to be a unit.

During the Junior year, the variety resulting from the single-term division is retained, but with the Senior year, the student's increase in power of continuous concentration on work of a more specializing nature is met by devoting the solid year to that text which represents "from Hadrian onwards the real strength of the Roman literature," as well as its most important original contribution to civilization.

#### JUNIOR YEAR.

##### I. Latin Literature on Rhetorical Theory and Criticism and on Education.

From Cicero's *Essays on Oratory*, Tacitus' *Dialogus de Oratoribus*, Horace's *Ars Poetica* and Quintilian's *Institutio Oratoria* one or two books are read by the whole class, others by individual members, with analyses and critical essays for the general information of the class.

##### II. Latin Literature on Philosophy.

Selections from Lucretius, Cicero's philosophical essays, and Seneca are treated as above. The text sets forth Roman views regarding the Divine Being, the immortality of the soul, the "higher law" of ethics, etc. An especial purpose is to interpret the Latin sources for the theology and ethics of the Stoic philosophy, "for three hundred years the healthiest and best influence in Roman society," and to prepare for intelligent views of its influence on Roman life and legislation.

**III. Early Latin.**

Selections from Bruns' *Fontes Iuris Romani* form the basis of the class-work, with individual study of other remains of early Latin, as accessible in Wordsworth's and Allen's selections. Attention is called to the peculiarities of the curial style. The subject-matter necessitates consideration of the early law.

**IV. Roman Law.****SENIOR YEAR.**

At first, antejustinianian text is translated and interpreted with a resumé of the historical development of the private law. Later, Justinian's redaction is studied, with reading of the Institutes and excerpts from the Digest, with several full titles. By following closely the language and order of the Institutes, supplemented by citations from the larger works, an attempt is made to catch the Roman way of looking at legal questions as well as to gain some appreciation of the clearness and strength of style of the great jurists, and of the peculiarities of Justinian's latinity. It is hoped, too, that the student may gain some conception of Rome's world-historic function as law-maker.

From time to time, students have formed groups under the general rule respecting extra work, and the instructor has supplemented the class-room teaching by private instruction. Among the subjects which have been taken up are Colloquial Latin, Roman Topography and Archæology, and the History of the Literature of Roman Law.

## GREEK LANGUAGE AND LITERATURE.

The Greek course is divided into two parts, the division being at the end of the Sophomore year. The first is prescribed for the entire Classical Section; the second is one of the electives.

The required course aims to introduce the student to some of the best work of the greatest writers. It is sufficient in quantity to enable him to master the grammatical structure of the language. This, with the acquirement of a good vocabulary, is the end held first of all in view, but it is hoped that all will be enabled in some degree to feel the strength and beauty of the Greek literature.

The course begins with the study of Homer as a continuation of the work done in the preparatory school. After the first term attention is directed chiefly to the Attic prose of the fifth and fourth centuries before Christ. While the particular books read vary somewhat from year to year, there will not be much variation in the authors chosen, which are the following: Homer, Herodotus, Xenophon, Plato, Lysias, Demosthenes, Æschines and Aristophanes. Exercises in writing Greek are constantly required during these two years, based in part on special text books, and in part on the texts read.

During this course promising students are encouraged to read privately in addition to the work assigned to the class, and are examined thereon, credit being duly given in the annual catalogue.

The elective course running through the Junior and Senior years is divided according to the number of terms into six studies, in each of which a separate field of litera-

ture is chosen. In each term the plan contemplates three features—first, lectures by the instructor; second, readings assigned to the class for regular recitation, and third, individual tasks assigned to each student for private study, on which he will be expected to make written reports before the end of each term and on which he will be examined.

#### I. History.

##### JUNIOR YEAR.

The centre of the term's work is the history of Thucydides, one entire book at least being read in class. Portions of Herodotus are also taken up. The aim is twofold—on the one hand to give the student a vivid picture of the Peloponnesian war, and to acquaint him by means of lectures with the sources of our knowledge of Greek history, and on the other hand to trace the beginnings of prose-writing as an art.

#### II. Attic Oratory.

The class readings are taken from a number of orators, from Antiphon to Demosthenes, but the latter will generally be the centre of the term's study. The primary purpose is to trace the growth of prose style to its full maturity, but incidentally the history of the fourth century and of Athenian public institutions will be considered. By means of lectures the student is afforded a glimpse into the vast field of Greek Rhetoric.

#### III. Lyric Poetry.

Besides reading from a number of poets, a careful study of the metrical form will be required, both for the proper

appreciation of the lyrics themselves and to prepare the way for the easy understanding of the dramatic choruses. Metrical translations are encouraged.

#### SENIOR YEAR.

##### IV. The Drama.

At least two complete plays, one of Sophocles and one of Æschylus or Euripides, are read in class, and each member of the class will read privately at least one other. Memorizing of choral passages is recommended. The lectures will treat of the development of the drama as a literary type.

##### V. Philosophy.

The class readings will be taken from Plato and Aristotle, and will be varied from year to year. The lectures will attempt to present a general outline of the history of Greek philosophic thought.

##### VI. The Attic Revival.

The study of the last term will centre about Lucian, as an epitome of his time, in his relation to Attic culture and to philosophy and religion.

The elective course is not designed to make specialists, but to fit a man to specialize profitably if he so desires, and, in any case, to give the student an insight into the great types of the Greek literature, some knowledge of the civil history and inner life of the people, and an intelligent conception of the influence of Greece on human thought and culture.

## MODERN LANGUAGES.

**ENGLISH LANGUAGE AND LITERATURE.**—The course in English embraces in the Freshman year the required study of the history of the English language and its literature, and the critical reading of English classics. The instruction is given through text-books, lectures and class papers, in recitations, researches, essays and reviews by the student. A course of private reading is prescribed, upon which examinations are held. Essays in literary criticism are required during the Sophomore year. The elective study of the language and literature, including the study of Anglo-Saxon, is pursued during the Junior and Senior years.

The first term of the Junior year is devoted to the study of Poetics and the principles of criticism as introductory to the interpretation and critical study of the greater writers of the several periods. It is the aim of the department, in lectures, researches, collateral reading, and by seminary methods, to review the periods into which the history of English Literature may be divided; to exhibit the philosophy and course of its development; and to interpret and study critically the work of the greater writers in the several types of literary art. In the present course, English Philology is placed in the last term of the Senior year, but in subsequent courses it may be transferred to the first term of the Junior year.

**GERMAN.**—German is taught three hours a week throughout the Sophomore year as a required subject. During the first term, the grammar is the main object of study, with

constant practice in the translation of illustrative sentences, both from German into English and from English into German. At the same time the student is required to learn, day by day, short vocabularies of commonly-used words, for conversational drill in the class-room. In the second term easy German prose is read, both in set lessons and at sight, and in the third, selections from standard authors for careful translation and for literary analysis. It is the aim of the required course in German to give all the students a competent knowledge of the grammar, and a sufficiently large vocabulary to be able to read ordinary prose with ease, and to pursue further study by themselves without difficulty.

In the Junior and Senior years German is made one of the elective subjects, three hours a week throughout the Junior and four hours throughout the Senior year. The students who choose this subject are taught not only the reading knowledge of modern German, but are drilled in connected conversation and in the study of the older periods of the language from German text-books, the instruction throughout the Senior year being given entirely in the German language.

**FRENCH.**—French is taught three hours a week throughout the Junior year as a required study. A careful phonetic analysis of the pronunciation is insisted on, and the syntax is taught historically, presupposing a thorough acquaintance with the Latin grammar. In the second term a large amount of easy prose is read, with constant practice in translation both from French into English and from

English into French. In the third term the harder authors are selected and the literary form is studied as well as the language itself. The required course is intended to give to all a practical acquaintance with the language, wide enough to enable them to read ordinary French prose at sight.

In the Senior year French forms a part of one of the elective courses, being taught four hours a week to such as choose to pursue it. The aim of the course is to make the student acquainted with some of the best products of French literature during the seventeenth and nineteenth centuries.

#### MATHEMATICS AND ASTRONOMY.

**MATHEMATICS.**—Algebra and Geometry are required during the Freshman year. The course in Algebra introduces the student to the more abstract portions of the subject: Series, Mathematical Induction, the Method of Indeterminate Coefficients, the Binomial Theorem and the Theory of Equations. At the same time, practical training is given in the use of logarithms and in the solution of higher numerical equations.

In Geometry, the student is required not only to demonstrate theorems relating to the measurement of the circle, plane and solid angles and the solids of Geometry, but also to show how to apply them in original and practical problems to the mensuration of surfaces and solids.

Trigonometry and Analytic Geometry are taught during the Sophomore year, completing the required course in Mathematics. The Trigonometry studied includes trigonometric analysis and the solution of triangles, with appli-



cations to surveying and navigation. The course in Analytic Geometry treats of the representation of curves by means of equations. The properties of the line, circle and conic sections are studied by the use of Algebraic Analysis. This subject presents considerable difficulty to students not well grounded in Algebra, Geometry and Trigonometry.

Mathematics may be chosen as an elective study throughout the Junior and Senior years. Among the subjects offered in this course are the following :

Higher Algebra. Determinants.  
Theory of Equations.  
Analytic Geometry of Three Dimensions.  
Differential and Integral Calculus.  
Differential Equations.  
Analytic Mechanics.

**ASTRONOMY** — General Astronomy is taught during the second term to all the members of the Junior Class. The daily recitations are supplemented by lectures on the new astronomy and modern methods and instruments of astronomical research. These lectures are illustrated by photographic lantern views obtained from the leading observatories of the world. Mathematical and Practical Astronomy may be pursued as an elective study in combination with Mathematics throughout the Junior and Senior years. The course then includes :

Introduction to Mathematical Astronomy.  
Theory and Use of Instruments.  
Method of Least Squares.  
Practical Work in the Schanck Observatory.

This course is designed to give the student training in the theory and use of instruments of precision, and to enable him from his own observations of the heavenly bodies to solve various important problems in the applications of Astronomy: the Determination of Time, Longitude, Latitude, Direction of the Meridian, etc. Considerable attention is paid to methods of calculation and to the reduction of observations.

#### CHEMISTRY.

INORGANIC CHEMISTRY is taught from a text-book, and fully illustrated by lectures which demonstrate experimentally the points made in the book. The course covers the first term of Sophomore year, with exercises four hours each week. The intention is to give each student such a general knowledge of the science as every educated man should possess. Provision is made in an elective course for those who wish to pursue the subject further.

ELECTIVE CHEMISTRY.—In the Junior and Senior years students may elect a course in Analytical Chemistry with Laboratory Practice and Lectures. The experimental studies in this department have proved both attractive and profitable to those intending to devote themselves to Law or Medicine, or to business pursuits, as well as to men who intend to teach or to pursue lines of work immediately connected with chemistry and its applications.

The pupil begins by making the experiments in Remsen's Chemistry, thus acquiring by actual experience a familiarity with chemical substances and chemical phenomena.

The study of Qualitative Analysis is next taken up. The student makes the tests, studies the reactions, and proceeds rapidly from the analysis of simple substances to more complex. The method here followed of keeping notes of every step affords the student valuable practice in the three divisions of experimental science—Experiment, Observation and Inference. The theory of analysis is explained in the lectures and recitations on the subject. In connection with this subject, Blowpipe Analysis is also taught.

Students able to finish the foregoing before the end of the College year, proceed to Quantitative Analysis. The instruction in this subject is not so much on detail as on general principles and construction and use of apparatus. Typical salts of known composition are analyzed gravimetrically and volumetrically, and then substances requiring for their determination carefully constructed apparatus.

#### GEOLGY.

A text-book is used in the study of Geology, from which regular lessons are assigned. Each lesson is explained in advance, and amplified by a short lecture, at which time free use is made, by way of illustration, of the valuable collections of the College, which have been carefully arranged with reference to such use. The students are invited and encouraged to make all the use of these collections for which they have time, and the Museum is open for such study at suitable hours each day. At such times not only the mounted specimens in the cases may be inspected, but the drawers are opened, that an opportunity may be had for closer study.

**PHYSICS.**

This subject is taught by lectures, and copious additions are made to the matter of the text-book. Each point is demonstrated as far as possible; and the relations of the subject to ordinary natural phenomena, the processes of the industrial arts, etc., are pointed out. Students are encouraged to use the apparatus under the direction of the Professor in charge, and are trained to distinguish the essential from the casual conditions of experiments, as well as to infer from scientific data no more than is certain and warranted. The course begins with Mechanics and proceeds to Heat, Electricity, Sound and Light.

The apparatus is well fitted to illustrate all principles, and such additions are made to it as the industrial applications of science demand.

**ELECTIVE PHYSICS.**—During the Senior year of the Classical Course, Physics is an elective study.

The object of this elective is to furnish a sound, practical foundation to those who expect to engage in industrial pursuits, or in professions which demand acquaintance with the principles of Physics. The work consists of a course of laboratory exercises such as is set forth in Stewart and Gee's Practical Physics, besides many of the experiments described in the text-book used in the lecture course. The facilities of the Physical Laboratory have been greatly increased, so that all essentials are available to students.

**BIOLOGY.**

**PHYSIOLOGY AND ZOOLOGY.**—Work in these subjects is required during the first two terms of the Freshman year.

The method of instruction is by lectures and quizzes, supplemented by demonstrations from charts, specimens, dissections, and Auzoux models. The aim is to give the student a bird's-eye view of the principles of Physiology, the structure of animals, and such an acquaintance with the facts of Zoology as shall enable him later to pursue psychological and geological studies with increased profit.

**GENERAL BIOLOGY**—This is an elective subject in the Junior and Senior years. The distinctive studies of the Course in Biology of the Scientific School must be chosen. The time required is three morning hours and two afternoons in the Junior year, and four morning hours and two afternoons in the Senior year. A detailed account of the studies of this portion of the course is given under the sub-head of General Biology for the Scientific School. The election of Biology includes Zoology, Botany and Entomology, the complete course extending through two years.

#### **BOTANY.**

Students in all courses take Botany two hours a week in the Spring term of the Freshman year. Gray's "Revised Lessons" is used as the text-book in descriptive Botany, and in connection with this, the students familiarize themselves with the methods of plant analysis. Each point considered is, as far as possible, illustrated by living specimens, either grown in the laboratory for purposes of dissection or collected in the fields and forests. Students are taught the methods of preparing and mounting specimens and are required to make collections of their own during the term.

The work of the Junior and Senior years, required in the Courses in Agriculture and Biology, is open for election by the students of the corresponding years in the classical course.

#### HISTORY AND POLITICAL SCIENCE.

The study of History in the Classical Department is begun in the second term of the Sophomore year with the use of a text-book as a guide. The course is planned to cover European history, in outline, from the beginning of the Empire to the outbreak of the French Revolution. The progress of the greater movements in political and social development is traced, and emphasis is laid upon the formation and growth of modern States. In this required part of the course the method of instruction is to some extent topical, and aims to furnish information essential to good citizenship, to cultivate a habit of investigation, and to teach the student how to come to independent conclusions. Students are encouraged to use the library, are given direction in methods of historical work, and are taught the value of historical sources. A constant use of the historical atlas is required of the student throughout the prescribed courses.

**ELECTIVE HISTORY.**—Elective courses are open to Juniors and Seniors, offering facilities for advanced and systematic work in special periods of history, and for a study of the origin and development of political institutions. The courses include both European and American history.

The method of study is by lectures and topics. It aims to cultivate a spirit of original research and places emphasis

upon library investigations. For students of the Senior Class a Seminary of History and Political Science is organized, in which papers embracing the results of independent original study are reported.

The following is an outline of the proposed elective courses:

JUNIOR YEAR.

I. *The Periods of the Renaissance and the Reformation.*

The work will consist chiefly of library investigations and critical examinations of reports growing out of these studies. The class will meet three times each week during the first and second terms.

II. *English Constitutional History.*

Instruction will be given by text-books, lectures and required readings on assigned topics. This is taken as an introduction to American History. Three times each week during the third term.

SENIOR YEAR.

III. *Colonial History of America, followed by the Constitutional and Political History of the United States.*

The methods of instruction are in general the same as in the Junior year. It is designed to be a critical study of American history. Attention is especially given to the growth of nationality and to the development of the Constitution. Three hours each week during the first and second terms.

IV. *Comparative Study of the Modern Constitutions.*

In this course the Constitutions of modern European States are studied and compared with that of the United States. A part of the second and the third term, three hours each week.

V. *Seminary of History and Political Science.*

This is designed for original investigations, and for reports upon the current historical and economic literature. One hour each week throughout the year.

POLITICAL ECONOMY.—The Senior Class, in both the Classical and Scientific Departments, receives instruction in the principles of Political Economy four hours weekly during the first term. In addition to the use of a text-book, lectures, formal and informal, are given, discussions are held, special topics are assigned to individuals for careful study, the results of which are read before the class, and essays are prepared by the class on some subject chosen by the writer from a number relating to this science.

CONSTITUTIONAL LAW.—The Senior Class in both departments pursues the study of Constitutional Law four hours weekly during the Winter term. Cooley's Principles of Constitutional Law is used as a text-book. Lectures are read by the President before the class on the historical development of the Constitution and some of the more important decisions of the Supreme Court are analyzed, for example those relating to the prohibition of State laws impairing the Obligation of Contracts, the Legal Tender Cases and others of importance and paramount significance. The aim is to ground all the students in a knowledge of the elements of Constitutional Law and to give a special preparation to those about to choose the profession of the law. This is particularly kept in view in assigning the subjects for the essays which accompany the other work of the term.



**INTERNATIONAL LAW.**—This subject is taken up the last term of the Senior year. Lectures are given by the President four hours weekly. The peculiar character of this branch of law is dwelt upon, its development, the authorities and sources, and its present status.

**CIVICS.**—The President meets the Freshman Class of both departments one hour each week for their instruction by use of text-book and lecture in the elements of Civics and the duties of the citizen.

**MORAL PHILOSOPHY AND THE ENGLISH BIBLE.**

These studies are taken up during the Senior year. Those of the Classical section who so elect pursue the study of Butler's Analogy during the first term, and of Calderwood's Moral Philosophy through the second and third terms. The Classical section receive instruction by lectures on the English Bible during the second term.

Both sections of the Senior Class pursue the study of Practical Ethics during the third term.

**PHILOSOPHY AND LOGIC.**

**PHILOSOPHY.**—The Juniors are required to prepare five recitations a week in Porter's Elements of Intellectual Science during the first term. Fowler's and Jevons' Logics will be studied during the second term. Special courses in Philosophy will be given in Porter's Treatise on the Human Mind, Schwegler's History of Philosophy, Windelband's History of Philosophy, Fowler's and Ueberweg's Logics. In the Senior year courses in like manner

will be given in Kant's *Kritik*, Porter's *Human Mind*, Descartes' *Principia* and *Meditations* and Hegel's *Logic*.

**ELECTIVE COURSE IN PHILOSOPHY AND LOGIC.**—This course extends through the Junior and Senior years. It is intended to give an outline of the History of Philosophy, from the earliest period of Greek Speculation to the present time. Together with special Histories of Philosophy, such as Ueberweg's, Erdmann's and Windelband's, there will be studied representative works in Speculation, such as the following: Aristotle, *Metaphysics* and *De Anima*; Plato's *Theætetus* and *Parmenides*; *Fragmenta Philosophorum Græcorum* in the original; Leibnitz's *Nouveaux Essais*; Descartes' *Principia* and *Method*; Kant's *Kritik*; Hume's *Essays*; Berkeley's *Principles of Knowledge*; Janet's *Final Causes*; Jevons' *Principles of Science*; Bacon's *Novum Organum*; Herschell's *Discourse on Philosophy*; Whewell's *History of the Inductive Sciences*; Sir William Hamilton's *Lectures on Metaphysics*.

In *Logic*, the *Organon* of Aristotle in the original will be taught, together with Trendelenburg's *Elementa* and *Logische Untersuchungen*; Hegel's *Logic*, Harris' Translation; Ueberweg's *Logic*, Lindsay's Translation; Mill's, Bosanquet's, Bain's, Keynes', and Davis' *Logics*. Essays will be required of the students on the subjects studied, and syllabi of the lectures given.

In the various prizes which are offered there will be given especial inducement for advanced work. Classes will be formed of those students who offer themselves as candidates, under the general rule governing extra work which

is to receive special recognition, and these will undergo a weekly review, on the books in which the prize examination will be held, and on the subjects assigned for the prize theses. These recitations will involve critical study, and be unsparing in rigor, with a view to insure thorough work, and elicit original research. These classes for special work will be at hours agreed upon between Professor and student, and additional to schedule recitations.

#### RHETORIC.

ELOCUTION.—The aim is to develop effective delivery in forms of expression. The scope of instruction embraces Physical Culture, Respiration, a Training of the Voice and a cultivation of the powers by which thought is analyzed and presented in synthetic expression.

RHETORIC.—In the department of Rhetoric, begun during the Freshman year, an effort is made to teach the principles of Composition, not as laid down in mechanical rules, but as springing from psychological laws and relations. Ideas presented in accordance with various mental requirements and influences are shown to contain the true philosophy of rational and effective discourse.

Illustrative references to the Masterpieces of Oratory, and to other forms of the best English Classical Literature, are freely given. Essays are required throughout the entire course.

EXTEMPORE SPEAKING.—The Bussing Prizes for excellence in extempore speaking are designed to cultivate the habit of presenting clearly, forcibly and accurately, and

in a manner to convince an audience, the facts and ideas a student has upon themes with which he may fairly be supposed to be somewhat conversant. The competition for these prizes at the close of the Senior year after four years of drill in extempore speaking has shown excellent results.

#### THE FINE ARTS.

During the second term of this year there will be for the Seniors a course of lectures by Professor Van Dyke on the History of Painting, covering the ground from the earliest records of art in history to the present day. Van Dyke's "History of Painting" will be used as a text-book and all the lectures will be illustrated by lantern-slides and the casts, photographs and facsimiles of the Fine Arts collection.

#### HISTORY AND ART OF TEACHING.

Instruction is given by means of lectures during one term of the Senior year to the students of the Classical Department. Others who expect to teach, or who are interested in the subject, are allowed to attend the lectures.

The object of the course is to make the student acquainted with the most important educational theories and their place in history, and to introduce him to the study of the science and art of teaching. The principal educational classics are considered, and such practical work is done by reports and discussions as the time permits.

#### PHYSICAL TRAINING.

Exceptionally fine opportunities for Physical Training are afforded to all students by the new Robert F. Ballan-

tine Gymnasium and the Neilson Field, both of which are elsewhere described.

At the beginning of his Freshman year each student is given a physical examination conducted upon the same plan as that now in use at the leading colleges, and a complete record made of his physical condition. This examination is repeated from time to time and thus affords valuable information concerning the growth and development of the individual. At the time of the examination, an anthropometric chart is made out, showing the relation of the individual to the normal standard in size, strength and symmetry. From the information thus obtained, cards are made out specifying the exercises most suitable for each case.

For the Classical section of the Sophomore and Freshman Classes attendance at gymnastic exercise is required for four half-hour periods weekly throughout the year. For these classes a graded course has been arranged. To the Freshman are taught free exercises, exercises with Indian clubs, exercises upon the so-called "heavy" apparatus, and track and field athletics. The Sophomores use dumb-bells, wands and the heavy apparatus, and also have instruction in athletics.

With all other students gymnasium attendance is optional. Classes are formed to suit the general convenience and a progressive course of instruction followed.

During the winter term a class is formed from the two higher classes for instruction in fencing with foils and single sticks.

Swimming is regularly taught during the Spring term.

## SCIENTIFIC DEPARTMENT.

## RUTGERS SCIENTIFIC SCHOOL.

BY ACT OF THE LEGISLATURE OF NEW JERSEY, APPROVED APRIL 4TH, 1864,  
 CONSTITUTED THE STATE COLLEGE FOR THE BENEFIT OF AGRICULTURE  
 AND THE MECHANIC ARTS, IN ACCORDANCE WITH THE LAW  
 OF THE UNITED STATES OF JULY 2D, 1862.

## BOARD OF VISITORS.

(APPOINTED BY THE GOVERNOR.)

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### 1. ADMISSION.

Every applicant for admission must be at least sixteen years of age, and must submit to the President proper testimonials of a good moral character. If an applicant for a Free State Scholarship he must also present to the President a certificate of appointment.

**EXAMINATIONS AT THE COLLEGE.**—Examinations for admission will be held on the Friday and Saturday preceding Commencement week, June 12th and 13th, 1896, beginning at 10 o'clock A. M. on Friday, in the Registrar's office. Applicants may also be examined on Tuesday, September 15th, at the same hour and place. Students are advised to be present for examination in June.

**STATE COMPETITIVE EXAMINATIONS.**—Students will also be admitted who pass the State competitive examinations, which will be held in the Court House of each county on Saturday, June 6th, 1896. For the requirements of the State law see page 57.

Only such students are admitted with conditions as are, in the opinion of the Faculty, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class. Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that all entrance conditions will be made up before the Thanksgiving recess.

**CERTIFICATES.**—From certain preparatory schools of established reputation students are admitted without examination upon the Principal's certificate that they have completed the required amount of work and are prepared to enter College. Blanks for such certificates will be furnished upon application. See page 18.

**ADVANCED STANDING.**—Students may enter advanced classes either at the beginning of the College year or at other times, if they sustain a satisfactory examination both on the preliminary studies and on those already passed over by the class which they propose to enter. Full equivalents will be accepted.

**SPECIAL STUDENTS.**—In exceptional cases students properly prepared for admission to the Freshman Class may, by special vote of the Faculty, be permitted to pursue select branches of study. Such students are required to take examinations, all work in Composition and Elocution and Military Drill with the class with which they have studied.

#### FREE SCHOLARSHIPS.

**STATE SCHOLARSHIPS, ACT OF 1864.**—Under this law, a certain number of students from the State of New Jersey are received into this department of the College, and educated free of expense for tuition. These students are admitted to free scholarships on the recommendation of the Superintendent of Schools in each county after passing the required examinations. The scholarships provided by the Act of 1864 are distributed among the counties in proportion to their population, as follows:



ATLANTIC, . . . . .	1	MIDDLESEX, . . . . .	2
BERGEN, . . . . .	1	MONMOUTH, . . . . .	2
BURLINGTON, . . . . .	3	MORRIS, . . . . .	2
CAMDEN, . . . . .	2	OCEAN, . . . . .	1
CAPE MAY, . . . . .	1	PASSAIC, . . . . .	2
CUMBERLAND, . . . . .	1	SALEM, . . . . .	1
ESSEX, . . . . .	6	SOMERSET, . . . . .	1
GLOUCESTER, . . . . .	1	SUSSEX, . . . . .	1
HUDSON, . . . . .	6	UNION, . . . . .	2
HUNTERDON, . . . . .	1	WARREN, . . . . .	1
MERCER, . . . . .	2		<hr/> 40

**SCHOLARSHIPS-AT-LARGE.**—In June, 1888, the Trustees of the College provided ten additional free State scholarships.

**STATE SCHOLARSHIPS, ACT OF 1890.**—By a law passed March 31st, 1890, a number of free scholarships, one for each assembly district for each year, is established and offered to students in all parts of the State. The candidates for these scholarships are selected as follows: A competitive examination, under the direction of the City Superintendents and the County Superintendent of Education in each county, shall be held at the County Court House in each county of the State, upon the first Saturday in June in each year. If several candidates for appointment pass the examination from the same assembly district, all who are suitably qualified shall receive appointment to such free scholarships, excess from certain assembly districts being counterbalanced by vacancies in other assembly districts, provided only that the entire number of appointees shall not exceed the entire number of Free Scholarships created by the State.

Letters of inquiry to the President, or to the Registrar, will receive careful attention.

## REQUIREMENTS FOR ADMISSION.

The following are the subjects in which those who wish to enter the Freshman Class of the Scientific Department are examined. Since all are such as can be acquired in our best common schools, it is insisted that the preparation in them shall be thorough and complete. The general regulations as to conditions and their removal will be the same as those which apply to the Classical Course, and may be found on page 17.

## 1. MATHEMATICS.

**ARITHMETIC.**—Fundamental Operations; Common and Decimal Fractions; Denominate Numbers, including the Metric System; Percentage, including Interest and Discount; Proportion; Square and Cube Root.

*In preparing the student for this course, it is recommended that he be drilled thoroughly in Arithmetic, as a clear understanding of its simple elementary and practical principles is essential to a good Mathematician.*

**ALGEBRA** through Arithmetic, Geometric and Harmonic Progressions, or the first seventeen chapters of Bowser's College Algebra.

His preparation in Algebra should be *very thorough*. In addition to understanding the PRINCIPLES of the science he must fix them in his memory, and learn their bearing and utility, and for this reason he should pay great attention to the solution of practical examples. What is needed is ability to solve ordinary examples with facility and to explain them thoroughly.

Attention is specially called to the solution of Simultaneous Quadratic Equations, and of Equation of Higher Degrees than the Second, which may be reduced to the quadratic form, and then solved by the methods of solving quadratics.

The student should form the habit of arranging his work, whether on the blackboard or on paper, in a neat and orderly manner.

**GEOMETRY.**—The *whole* of Plane and Solid Geometry.

## 2. THE ENGLISH BRANCHES.

## ENGLISH GRAMMAR.

## SPELLING.

A SHORT ENGLISH ESSAY is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1896, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Shakespeare's *Twelfth Night*; the *Sir Roger de Coverley Papers* in *The Spectator*; Irving's *Sketch Book*; Scott's *The Abbot*; Webster's *First Bunker Hill Oration*; Macaulay's *Essay on Milton*; Longfellow's *Evangeline*.

In 1897, the examination will be upon Shakespeare's *As You Like It*; De-foe's *History of the Plague in London*; Irving's *Tales of a Traveller*; Hawthorne's *Twice Told Tales*; Longfellow's *Evangeline*; George Eliot's *Elas Marner*.

The following books are set apart for examination upon subject-matter, form and structure, 1897: Shakespeare's *The Merchant of Venice*; Burke's *Speech on Conciliation with America*; Scott's *Marmion*; Macaulay's *Life of Samuel Johnson*.

HISTORY OF THE UNITED STATES.—Johnston's History of the United States, or its equivalent.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

## DESCRIPTIVE GEOGRAPHY.

## PHYSICAL GEOGRAPHY.

## 3. SCIENCE.

PHYSICS.—Students are required to show satisfactory acquaintance with Wells' or Cooley's Natural Philosophy, or Peck's Ganot's Physics.

CHEMISTRY.—Such knowledge of Chemistry as may be obtained from a thorough study of Remsen's, Cooley's or Steele's Chemistry complete. Remsen's Elements of Chemistry is recommended, because Remsen's text-books are used during the course.

## 2. COURSES OF STUDY.

During the first year the studies of the full courses are the same, and are designed to furnish a suitable introduction to the pursuit of the higher branches in either course.

The elements of Agriculture, of Biology and of Botany are taught during the first, second and third terms respectively. Mathematics (Algebra, Trigonometry and Surveying), Draughting, English and French are taught throughout the year.

At the end of the first year students elect to pursue one of the full courses, and for the remaining three years their studies are directed with particular reference to the choice made. Some studies which go to the equipment of the intelligent citizen, whatever his occupation, such as History, English Literature, Political Economy, Practical Ethics, Astronomy and others, are interspersed throughout the entire four years, in order that students may not only acquire a thorough preparation for their special pursuits in life, but may at the same time receive a liberal training which will fit them to discharge wisely and usefully the duties of good citizenship.

Five distinct courses of study are included in the schedule which follows:

- I. A COURSE IN AGRICULTURE.
- II. A COURSE IN CIVIL ENGINEERING AND MECHANICS.
- III. A COURSE IN CHEMISTRY.
- IV. A COURSE IN ELECTRICITY.
- V. A COURSE IN BIOLOGY.

In the following schedule the Arabic numerals in light-faced type indicate the number of morning hours each week; those in bold-faced type the number of afternoon hours. Exercises throughout the four years in Composition, Declamation and Extempore Speaking Bible Class (optional) and Sermon each Sunday morning. Military Drill twice a week.

## FRESHMAN CLASS.

*Uniform Schedule for all Scientific Courses.*

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. FRENCH.—Grandgent's French Grammar; Grandgent's Lessons and Exercises; Labiche's Voyage de M. Perrichon; sight reading.....	5
2. MATHEMATICS.—Bowser's Algebra, completed.....	5
3. PRINCIPLES OF AGRICULTURE.—Voorhees.....	2
4. RHETORIC.—Clark; Lectures; Essays.....	2
5. ENGLISH LITERATURE.—History of the Language; Lectures; Pancoast's Introduction to English Literature; Chaucer and Spenser; Private Reading; Lamb's Tales of Shakespeare; First Two Books of Paradise Lost.....	1
6. CIVICS.....	1
7. DRAUGHTING.—Practice in Use of Instruments; Geometrical Problems and Applications.....	4

## SECOND TERM, THIRTEEN WEEKS.

1. FRENCH.—Halévy's L'Abbé Constantin; sight reading.....	5
2. MATHEMATICS.—Bowser's Trigonometry, Plane and Spherical.....	5
3. ZOOLOGY.—Orton; Lectures.....	2
4. ENGLISH LITERATURE.—Pancoast's Introduction to English Literature, .....	4
5. DRAUGHTING.—Projections.....	4

## THIRD TERM, TEN WEEKS.

1. FRENCH.—Lamartine's Graziella; Scientific Authors; sight reading..	5
2. MATHEMATICS.—Surveying, Carhart.....	5
3. BOTANY.—Gray's Revised Lessons.....	2
4. ENGLISH LITERATURE.—Pancoast's Introduction to English Literature, .....	4
5. DRAUGHTING.—Free-hand Drawing and Perspective.....	4

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Agriculture, Course in Chemistry, and Course in Biology.*

## FIRST TERM.

Hours a week.

1. EXPERIMENTAL CHEMISTRY.—Remsen (first two months).....	5
2. BLOWPIPE ANALYSIS.—Landauer; Lectures (last month of term)....	
3. CHEMISTRY.—Remsen; Lectures, with Experiments.....	4
4. PHYSICS.—Gadot; Lectures.....	3
5. GERMAN.—Whitney's Brief German Grammar; Andersen's Märchen; sight reading.....	3
6. ENGLISH LITERATURE.—English Authors.....	1
7. CHEMICAL LABORATORY PRACTICE.—Experimental Chemistry and Blowpipe Analysis.....	9

## SECOND TERM.

1. QUALITATIVE ANALYSIS.—Elliot Storer; Fresenius; Lectures.....	5
2. CHEMISTRY.—Remsen; Lectures, with Experiments.....	3
3. PHYSICS.—Gadot; Lectures.....	3
4. GERMAN.—German Lyric Poetry; sight reading.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9

## THIRD TERM.

1. QUALITATIVE ANALYSIS.—Elliot Storer; Fresenius; Lectures.....	5
2. CHEMISTRY.—Organic Chemistry; Lectures, with Experiments.....	3
3. PHYSICS.—Gadot; Lectures.....	3
4. GERMAN.—German Science Reader, by Gove; sight reading.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	9

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Civil Engineering and  
Mechanics and Course in Electricity.*

## FIRST TERM.

Hours a week.

1. DESCRIPTIVE GEOMETRY.—Church.....	5
2. CHEMISTRY.—Remsen ; Lectures, with Experiments.....	4
3. PHYSICS.—Ganot ; Lectures.....	3
4. GERMAN.—Whitney's Brief German Grammar ; Andersen's Märchen ; sight reading.....	3
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Lettering.....	4

## SECOND TERM.

1. ANALYTIC GEOMETRY.—Bowser.....	5
2. CHEMISTRY.—Remsen ; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot ; Lectures.....	3
4. GERMAN.—German Lyric Poetry ; sight reading.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Projections ; Intersections and Development of Sur- faces, etc.....	4

## THIRD TERM.

1. ANALYTIC GEOMETRY.—Bowser, Completed.....	5
2. CHEMISTRY.—Organic Chemistry ; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot ; Lectures.....	3
4. GERMAN.—German Science Reader, by Gove ; sight reading.....	4
5. ENGLISH LITERATURE.—English Authors.....	1
6. DRAUGHTING.—Shades and Shadows ; Linear Perspective, etc.....	4

## JUNIOR CLASS.

*Schedule for Course in Agriculture.*

FIRST TERM.		Hours a week.
1. AGRICULTURE.—Agricultural Chemistry.....	3+3	
2. GENERAL BIOLOGY.....	2	
3. ELEMENTS OF MECHANISM.....	2	
4. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....	2	
5. HISTORY.—Myers' Mediaeval and Modern History.....	5	
6. MILITARY SCIENCE.....	1	
7. BIOLOGICAL LABORATORY PRACTICE.....	6	

SECOND TERM.		
1. AGRICULTURE.—Soils and Crops.....	3	
2. ANATOMY OF INVERTEBRATES; VEGETABLE HISTOLOGY.....	2	
3. MINERALOGY.—Lectures.....	2	
4. LOGIC.—Jevons-Hill's; Mill's, unabridged.....	2	
5. HISTORY.—Myers' Mediaeval and Modern History.....	3	
6. ASTRONOMY.—Young's Elements.....	3	
7. ZOOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	

THIRD TERM.		
1. VEGETABLE PHYSIOLOGY.....	3	
2. ENTOMOLOGY.—Structure of Insects.....	5	
3. HISTORY OF CIVILIZATION.....	5	
4. MILITARY SCIENCE.....	2	
5. BOTANICAL AND ENTOMOLOGICAL LABORATORY PRACTICE.....	9	

## SENIOR CLASS.

FIRST TERM.		
1. AGRICULTURE.—Manures and Manuring.....	4	
2. ENTOMOLOGY.—Systematic.....	3	
3. ANATOMY OF VERTEBRATES.....	2	
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
5. GEOLOGY.—Dana.....	2	
6. ZOOLOGICAL AND ENTOMOLOGICAL LABORATORY PRACTICE.....	9	

SECOND TERM.		
1. AGRICULTURE.—Animal Nutrition.....	5	
2. AGRICULTURAL ZOOLOGY.....	2	
3. BOTANY.—Cryptogamic.....	2	
4. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	
5. GEOLOGY.—Dana.....	2	
6. MILITARY SCIENCE.....	1	
7. ZOOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	

THIRD TERM.		
1. AGRICULTURE.—Breeds and Breeding.....	3	
2. ECONOMIC ENTOMOLOGY.....	4	
3. VEGETABLE PATHOLOGY.....	2	
4. INTERNATIONAL LAW.....	4	
5. PRACTICAL ETHICS.....	2	
6. ENTOMOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	
7. THESIS.....	2	



## JUNIOR CLASS.

*Schedule for Course in Civil Engineering and Mechanics.*

FIRST TERM.		Hours a week.
1. DIFFERENTIAL CALCULUS.—Bowser.....		5
2. ELEMENTS OF MECHANISM.....		2
3. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....		2
4. HISTORY.—Myers' Mediaeval and Modern History.....		5
5. MILITARY SCIENCE.....		1
6. DRAUGHTING.—Lettering; Plain and Colored Topography; Machine Construction .....		4

SECOND TERM.		
1. DIFFERENTIAL CALCULUS.—Completed; Bowser's Integral Calculus...		5
2. MINERALOGY.—Lectures.....		2
3. LOGIC.—Jevons-Hill's; Mill's, unabridged.....		2
4. HISTORY.—Myers' Mediaeval and Modern History.....		5
5. ASTRONOMY.—Young's Elements .....		8
6. DRAUGHTING.—India Ink and Color Shading, etc.....		4

THIRD TERM.		
1. INTEGRAL CALCULUS —Completed.....		5
2. RAILROAD CURVES.—Henck's Field Book.....		3
3. HISTORY OF CIVILIZATION.....		5
4. MILITARY SCIENCE.....		2
5. DRAUGHTING —Copying, Tracing, Blue-Print Copying, Railroad Profiles and Cross Sections; Field Work.....		4

## SENIOR CLASS.

FIRST TERM.		
1. MECHANICS.—Bowser .....		5
2. BRIDGE-BUILDING.....		4
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....		4
4. GEOLOGY.—Dana.....		2
5. DRAUGHTING.—Graphical Statics, with Applications.....		4

SECOND TERM.		
1. MECHANICS.—Bowser, Completed.....		5
2. BRIDGE-BUILDING.—Completed; Bowser's Hydromechanics.....		4
3. CONSTITUTIONAL LAW.—Cooley; Essays.....		4
4. GEOLOGY.—Dana .....		2
5. MILITARY SCIENCE.....		1
6. DRAUGHTING.—Graphical Statics, with Applications .....		4

THIRD TERM.		
1. HYDROMECHANICS.—Completed.....		5
2. GEODESY.—Lectures.....		4
3. INTERNATIONAL LAW .....		4
4. PRACTICAL ETHICS.....		2
5. DRAUGHTING.—Thesis.....		...

## JUNIOR CLASS.

*Schedule for Course in Chemistry.*

FIRST TERM.		Hours a week.
1. QUANTITATIVE ANALYSIS.—Fresenius; Cairns; Lectures.....	2	2
2. ORGANIC CHEMISTRY.—Remsen.....	2	2
3. ELEMENTS OF MECHANISM.....	2	2
4. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....	2	2
5. HISTORY.—Myers' Mediaeval and Modern History.....	5	5
6. MILITARY SCIENCE.....	1	1
7. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	11
SECOND TERM.		
1. ORGANIC CHEMISTRY.—Remsen.....	4	4
2. MINERALOGY.—Lectures and Crystallography.....	3	3
3. LOGIC.—Jevons-Hill's; Mill's, unabridged.....	2	2
4. HISTORY.—Myers' Mediaeval and Modern History.....	3	3
5. ASTRONOMY.—Young's Elements.....	3	3
6. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	11
THIRD TERM.		
1. STOICHIOMETRY.....	3	3
2. DETERMINATIVE MINERALOGY.....	5	5
3. HISTORY OF CIVILIZATION.....	5	5
4. MILITARY SCIENCE.....	2	2
5. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis.....	11	11

## SENIOR CLASS.

FIRST TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	3	3
2. PHYSICAL CHEMISTRY.—Lectures.....	5	5
3. REPORTS.—Recent Chemical Literature.....	1	1
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	4
5. GEOLOGY.—Dana.....	2	2
6. CHEMICAL LABORATORY.—Quantitative Analysis.....	11	11
SECOND TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	4	4
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures.....	4	4
3. REPORTS.—Recent Chemical Literature.....	1	1
4. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	4
5. GEOLOGY.—Dana.....	2	2
6. MILITARY SCIENCE.....	1	1
7. CHEMICAL LABORATORY.—Organic Chemistry.....	11	11
THIRD TERM.		
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures.....	3	3
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures.....	5	5
3. REPORTS.—Recent Chemical Literature.....	1	1
4. INTERNATIONAL LAW.....	4	4
5. PRACTICAL ETHICS.....	2	2
6. THESIS.....	1	1
7. CHEMICAL LABORATORY.—Organic Chemistry.....	11	11

## JUNIOR CLASS.

*Schedule for Course in Electricity.*

	FIRST TERM.	Hours a week.
1. DIFFERENTIAL CALCULUS.—Bowser.....	5	5
2. ELEMENTS OF MECHANISM.....	2	2
3. MENTAL PHILOSOPHY.—Hill's Elements of Psychology ; Janet's Final Causes.....	2	2
4. HISTORY.—Myers' Mediæval and Modern History.....	5	5
5. MILITARY SCIENCE.....	1	1
6. DRAUGHTING.—Machine Construction.....	4	4
7. LABORATORY.—Physical Measurements.....	3	3
SECOND TERM.		
1. DIFFERENTIAL CALCULUS.—Completed ; Bowser's Integral Calculus...	5	5
2. MINERALOGY.—Lectures.....	2	2
3. LOGIC.—Jevons-Hill's ; Mill's, unabridged.....	2	2
4. HISTORY.—Myers' Mediæval and Modern History.....	3	3
5. ASTRONOMY.—Young's Elements.....	3	3
6. DRAUGHTING.—India Ink and Color Shading, etc.....	4	4
7. LABORATORY.—Mechanics ; Measurement of Power.....	3	3
THIRD TERM.		
1. INTEGRAL CALCULUS.—Completed.....	5	5
2. ELEMENTARY MAGNETISM AND ELECTRICITY.....	3	3
3. HISTORY OF CIVILIZATION.....	5	5
4. MILITARY SCIENCE.....	2	2
5. DRAUGHTING.—Construction, Copying, Tracing, Blue-Print Copying..	4	4
6. LABORATORY.—Heat ; Magnetic and Electrical Measurement.....	3	3

## SENIOR CLASS.

	FIRST TERM.	
1. MECHANICS.—Bowser.....	5	5
2. PRACTICAL ELECTRICITY.....	4	4
3. POLITICAL ECONOMY.—Walker and Perry ; Lectures.....	4	4
4. GEOLOGY.—Dana.....	2	2
5. DRAUGHTING.—Graphical Statics, with Applications.....	4	4
6. LABORATORY.—Electrical Measurement.....	3	3
SECOND TERM.		
1. MECHANICS.—Bowser's, Completed.....	5	5
2. DYNAMO-ELECTRIC MACHINERY.....	4	4
3. CONSTITUTIONAL LAW.—Cooley ; Essays.....	4	4
4. GEOLOGY.—Dana.....	2	2
5. MILITARY SCIENCE.....	1	1
6. DRAUGHTING.—Graphical Statics, with Applications.....	4	4
7. LABORATORY.—Electrical Testing ; Dynamic Machines.....	3	3
THIRD TERM.		
1. MATHEMATICAL THEORY OF ELECTRICITY.....	5	5
2. THEORY OF ALTERNATING CURRENTS.....	4	4
3. INTERNATIONAL LAW.....	4	4
4. PRACTICAL ETHICS.....	2	2
5. LABORATORY.—Dynamic Machines.....	3	3
6. DRAUGHTING.—Thesis.....		

## JUNIOR CLASS.

*Schedule for Course in Biology.*

FIRST TERM.		Hours a week.
1. GENERAL BIOLOGY.—Parker's Lessons.....	5	2
2. ELEMENTS OF MECHANISM.....	2	2
3. MENTAL PHILOSOPHY.—Hill's Elements of Psychology; Janet's Final Causes.....	2	2
4. HISTORY.—Myers' Mediaeval and Modern History.....	5	5
5. MILITARY SCIENCE.....	1	1
6. BIOLOGICAL LABORATORY PRACTICE.....	9	9
SECOND TERM.		
1. ANATOMY OF INVERTEBRATES.....	5	4
2. VEGETABLE HISTOLOGY.....	4	2
3. MINERALOGY.—Lectures.....	2	2
4. LOGIC.—Jevons-Hill's; Mill's, unabridged.....	2	2
5. HISTORY.—Myers' Mediaeval and Modern History.....	3	3
6. ASTRONOMY.—Young's Elements.....	3	3
7. ZOOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	9
THIRD TERM.		
1. VEGETABLE HISTOLOGY.....	4	4
2. ANATOMY AND PHYSIOLOGY OF INSECTS.....	4	4
3. HISTORY OF CIVILIZATION.....	5	5
4. MILITARY SCIENCE.....	2	2
5. BOTANICAL AND ENTOMOLOGICAL LABORATORY PRACTICE.....	9	9

## SENIOR CLASS.

FIRST TERM.		
1. ANATOMY AND EMBRYOLOGY OF VERTEBRATES.....	4	5
2. SYSTEMATIC ENTOMOLOGY.....	5	4
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	2
4. GEOLOGY.—Dana.....	2	2
5. ZOOLOGICAL AND ENTOMOLOGICAL LABORATORY PRACTICE.....	9	9
SECOND TERM.		
1. ANATOMY AND HISTOLOGY OF MAMMALS.....	5	4
2. VEGETABLE PHYSIOLOGY.....	4	4
3. CONSTITUTIONAL LAW.—Cooley; Essays.....	4	2
4. GEOLOGY.—Dana.....	2	1
5. MILITARY SCIENCE.....	1	9
6. ZOOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	
THIRD TERM.		
1. ECONOMIC BOTANY; VEGETABLE PATHOLOGY.....	4	5
2. SYSTEMATIC AND ECONOMIC ENTOMOLOGY.....	5	4
3. INTERNATIONAL LAW.....	4	2
4. PRACTICAL ETHICS.....	2	9
5. ENTOMOLOGICAL AND BOTANICAL LABORATORY PRACTICE.....	9	
6. THESIS.....		

### 3. DESCRIPTION OF THE COURSES OF STUDY.

#### PREScribed STUDIES.

All candidates for the degree of B S. pursue a certain number of subjects in common in addition to the more specialized studies of the various elective courses. The purpose is to give all who take the bachelor's degree such general training as shall make them broadly-educated and intelligent citizens. These prescribed studies may be grouped as follows:

#### AGRICULTURE AND THE NATURAL SCIENCES.

AGRICULTURE is required two hours a week during the first term of the Freshman year. The aim is to give the student definite information concerning the formation and composition of soils, the growth and development of plants and animals, the transformations and uses of the various farm products, and the relation of farming to other industries.

ZOOLOGY is required in the Winter term, Freshman year, two hours weekly. Systematic Zoology in the old sense is not taught. The aim is to present, as far as the time will allow, a few of the great biological principles which are illustrated in the animal kingdom. There is, therefore, introduced considerable Physiology as well as Morphology. The student gets a practical knowledge of what is meant by anatomy, histology, development, classification, nutrition, protoplasm, differentiation, heredity, etc. Orton's Zoology is used as a text-book, supplemented by demonstrations from specimens, charts and Auzoux models.

**BOTANY.**—Students in all courses take Botany two hours a week in the third term of the Freshman year, and the ground covered is embraced by “Gray’s Revised Lessons.” In connection with the text-book work, each student makes drawings and descriptions of leaves, stems, roots and other parts of plants. This is followed by a thorough study of the flower from living specimens gathered in the field. The terms used in Descriptive Botany are dwelt upon so that each member of the class becomes familiar with the methods of determining the botanical names of plants, and acquaints himself with the relationship of genera and orders. Students are taught the methods of preparing and mounting herbarium specimens, and are required to make collections of their own.

**GENERAL CHEMISTRY** is taught from a text-book fully illustrated by experimental lectures, during two terms of the Sophomore year. An endeavor is made to make the student understand the sure basis of fact on which the science of Chemistry rests, and to reason for himself from these facts. He is also taught to make a careful distinction between facts and theories, and not to confound that which is proved with that which is merely speculative.

**ORGANIC CHEMISTRY** begins in the third term of Sophomore year, so that students looking toward Agriculture and Biology, as well as Chemistry, can get some idea of the chemical changes connected with their prospective subjects before more detailed study comes. The general behavior of carbon in its compounds is considered, and the different classes it forms, as well as their relations, are studied

so that the fundamental chemical changes concerned in the growth of plant or animal can be properly understood by students in these courses. It is continued through the first two terms of the Junior year in the Chemical Course only.

**PHYSICS.**—Three hours weekly, during the entire Sophomore year, are devoted to this subject. The presentation is by lectures, covering the ground of the text-books of Ganot and Deschanel. Recitations are both oral and written, special attention being given to deduction of the general from particulars, as well as to inferences from general principles. The course is supplemented by detailed study of the physical basis of practical machinery during the first term of the Junior year, two hours weekly.

**ASTRONOMY.**—General Astronomy is taught during the second term to all the members of the Junior class. The object of this study is to acquaint the student with the leading facts and discoveries of the new Astronomy, and to present the methods and principles of modern astronomical research. The daily recitations are supplemented by lectures illustrated by photographic lantern views obtained from the principal observatories of the world.

**MINERALOGY** is taught in the second term of the Junior year, lectures being given at each session, illustrated by specimens taken not only from the College collection, but also from the private collection of the Professor in charge. Full notes of these lectures are required from each student as well as occasional recitations on the subject.

**GEOLOGY.**—In the study of Geology, which occupies two terms of the Senior year, a text-book is used, but each lesson is explained in advance by a short lecture, at which time suitable specimens are exhibited.

#### MATHEMATICS.

During the first year all students of the Scientific School are instructed in Algebra, Trigonometry, Surveying and Draughting. Algebra is completed and the students receive field practice in Surveying sufficient to make them familiar with the uses of the compass and transit and able to determine magnetic variations.

At the beginning of the second year the student elects the course he will pursue for the remainder of his College course, and the mathematics included is applicable to such course and will be mentioned in detail under the heading of those courses.

#### GRAPHICS.

The instruction in this department is oral and by illustration or supervision, except in Descriptive Geometry. In this subject a text-book is used in the recitation-room, while the principles there discussed are more fully illustrated by problems assigned for graphical solution in the draughting room. When the student has acquired some facility in the use of instruments, he is taught the methods of Projections, Intersections and Developments of simple geometrical surfaces. In the Sophomore year, the course in Drawing is based on Descriptive Geometry. Besides the solution of problems in Solid Geometry, the course, during the year, includes practice in Shades and Shadows



and Linear Perspective, the work being all directed by mathematical principles.

During the Junior and Senior years, the aim of the instruction is to acquaint the student with some of the many applications of the principles of Drawing bearing especially on those subjects which are applicable in the course which he has elected, much stress being laid on the applications of graphical statics. The design is to prepare intelligent and ready draughtsmen, familiar with fundamental principles and methods; to give the student a safe beginning on which to grow more easily and surely into the work of the practical designer.

#### MODERN LANGUAGES.

ENGLISH.—In the department of English the students are required in the first term of the Freshman year to study the history of the English language; in the second and third terms, the history of English literature and selections of English prose and poetry, and throughout the Sophomore year, to write essays in literary criticism which call for the careful study of the best authors. This is supplemented in the Freshman year by a systematic course of private reading prescribed for examination. The instruction is given through text-books, lectures, and class papers, in recitations, researches and essays. The course aims to create a love for literature, train the student in the interpretation and critical study of it, and impart so much of the literature itself as will enrich his mind with the best thought and his speech with the most expressive diction of our mother tongue.

The recitations in Rhetoric and the training in Elocution and in Extempore Speaking are identical in character and amount with the work done in those branches in the Classical Department. See page 51.

**FRENCH.**—French is taught five hours a week throughout the Freshman year as a required study. An accurate pronunciation is insisted on, and a knowledge of French grammar. In the second term a large amount of easy prose is read, with constant practice in translation both from French into English and from English into French. In the third term the selections offer greater difficulties, and the literary form is studied as well as the language itself. The required course is intended to give to all a practical acquaintance with the language, wide enough to enable them to read ordinary French prose at sight.

**GERMAN.**—German is taught three hours a week during the first term, and four hours a week during the second and third terms of the Sophomore year as a required subject. During the first term, the grammar is the main object of study, with constant practice in the translation of illustrative sentences, both from German into English and from English into German. At the same time the student is required to learn, day by day, short vocabularies of commonly-used words, for conversational drill in the class-room. In the second term easy German prose is read, both in set lessons and at sight, and in the third, selections from standard authors for careful translation and for literary analysis. It is the aim of the required course

in German to give all the students a competent knowledge of the grammar, and a sufficiently large vocabulary to be able to read ordinary prose, and to pursue further study by themselves with ease.

POLITICAL SCIENCE AND HISTORY.

CIVICS.—The President meets the Freshman Class during the first term one hour each week for instruction in the rights and duties of the citizen.

POLITICAL ECONOMY, CONSTITUTIONAL LAW, INTERNATIONAL LAW.—The President meets the Senior Class of the Scientific School four hours each week during the year for instruction in these branches. See page 48.

HISTORY.—For students in the Scientific School the study of History is begun in the Junior year with the use of a text-book as a guide. The course embraces a study of European history from the fall of the Empire to the outbreak of the French Revolution.

The method of instruction is to some extent topical, and aims to furnish information essential to good citizenship, to cultivate a habit of investigation and to teach the student how to come to independent conclusions. Students are encouraged to use the library, are given direction in methods of historical work and are taught the value of historical sources.

PHILOSOPHY AND LOGIC.

PHILOSOPHY.—The Juniors are required to prepare two recitations a week in Porter's Elements of Intellectual Science during the first term. Fowler's and Jevons'

Logics will be studied during the second term. Special courses in Philosophy will be given in Porter's Treatise on the Human Mind, Schwegler's History of Philosophy, Windelband's History of Philosophy, Fowler's and Ueberweg's Logics.

**ETHICS.**—In the third term both sections of the Senior Class pursue the study of Practical Ethics.

#### MILITARY DEPARTMENT.

This department is in charge of the Professor of Military Science and Tactics, an officer of the regular army, detailed by the War Department for the purpose.

Instruction is both practical and theoretical.

**PRACTICAL.**—The student, on entering College, is drilled in the School of the Soldier, including bayonet exercise, and is advanced, successively, to the Schools of the Company and Battalion.

Considerable attention is given to target practice, the College being supplied with latest-model Springfield rifles and a liberal supply of rifle ammunition.

**THEORETICAL.**—During the Junior and Senior years, elementary instruction, by means of lectures and recitations, is given in the Art and Science of War, Modern Tactics, Modern Small Arms and Cannon, Explosives, Military Correspondence and Reports, Care of Troops in the Field, Military and Martial Law, and other military subjects.

**UNIFORM.**—A uniform, consisting of cap, blouse and trousers of dark-blue cloth, has been adopted, the cost of

which is about \$14, or considerably less than that of a good suit of civilian's clothes. The entire suit is neat and serviceable, and, while required to be worn at drills, may be worn on any occasion.

MILITARY DRILL is required of all students in the Scientific Department, except as they may be excused by reason of conscientious scruples, physical disability or some similarly valid reason.

In the Gymnasium, a drill-room and armory have been provided for purposes of military instruction.

The object of instruction in this department is not only to comply with the requirements of the laws of Congress for the State Colleges organized under the Act of July 2d, 1862, but also to improve the health and physique of students, and to give that elementary military knowledge which every citizen should possess, that he may render intelligent and effective aid to his country or State in case of war or riots.

#### PHYSICAL TRAINING.

Exceptionally fine opportunities for Physical Training are afforded to all students by the new Robert F. Ballantine Gymnasium and the Neilson Field, both of which are elsewhere described.

At the beginning of his Freshman year, each student is given a physical examination, conducted upon the same plan as that now in use at the leading colleges, and a complete record made of his physical condition. This examination is repeated from time to time, and thus

affords valuable information concerning the growth and development of the individual. At the time of the examination, an anthropometric chart is made out, showing the relation of the individual to the normal standard in size, strength and symmetry. From the information thus obtained, cards are made out specifying the exercises most suitable for each case.

With the students in the Scientific School, Gymnasium attendance is optional. Classes are formed to suit the general convenience and a progressive course of instruction followed.

During the Winter term a class is formed from the two higher classes for instruction in fencing with foils and single-sticks.

Swimming is regularly taught during the Spring term.

#### OPTIONAL STUDIES.

The members of the Senior Class in the Scientific School may attend the lectures upon the Fine Arts and upon the History and Art of Teaching, which are delivered each year before the Senior Class in the Classical School. See page 52.

In addition to the maintenance of a satisfactory standing in their prescribed and elective studies, regular attendance upon the lectures and upon the examinations in optional subjects is required.

**ELECTIVE COURSES.****COURSE IN AGRICULTURE.**

The object of this course is to provide a broad scientific training, which is now recognized as essential to the best life on the farm.

The major studies of this course include Applied Agriculture, Biology, Botany and Entomology.

**AGRICULTURE.**—The study of the principles of scientific agriculture and their application to the different lines of farm practice, is continued throughout both the Junior and Senior years. The elements contained in the atmosphere and soil being the basis of all vegetable and animal life, the student is instructed in the transformations which take place in these elements in the production of farm products, in the growth and improvement of farm animals, and in the principles which govern their conversion into products of the highest economic value.

While suitable text-books are used, the instruction, in both the principles and their application, is imparted mainly by lectures.

**ANIMAL BIOLOGY.**—In the Freshman year the students in Agriculture pursue Zoology two hours a week, the second term, reciting with the other students of the Scientific School.

In the Junior and Senior years, Fall and Winter terms, students in Agriculture devote two morning hours and two afternoons a week to General Biology, as follows: General Biology of Plants, first half Fall term, Junior year ;

General Biology of Animals, second half of same term ; Invertebrate Zoology, Winter term.

Vertebrate Zoology and Comparative Embryology, in the Fall term, Senior year ; Comparative Anatomy of the Domesticated Animals and Economic Zoology in the Winter term.

For further details see the fuller description of these courses under the Course in Biology. While students in Agriculture devote less time to biological subjects than is required of regular students in Biology, with whom they meet, the portions of the work to which they give attention are chosen with especial reference to their needs. The study of the anatomy of domestic animals is furthered by demonstrations from a fine Auzoux model of the horse.

**BOTANY.**—In the second term of the Junior year, the students examine with the compound microscope the minute structure of the leaves, stems, roots, flowers and seeds of various plants. The accompanying class-room exercises consist of recitations upon, and elaborations of, the work pursued in the laboratory.

During the third term the microscopic study of plants is continued, time being taken for making an herbarium of fifty species of flowering plants, named and neatly mounted.

In the second term of the Senior year a course of lectures is given upon vegetable physiology, and laboratory exercises are continued with ferns, mosses, lichens, algæ, etc. During the third term special attention is given to the various kinds of parasitic fungi, including rusts, mildews, moulds and blights so destructive to crops.



**ENTOMOLOGY.**—In the third term of the Junior year, Entomology will be taught chiefly by lectures and laboratory practice. During this term a knowledge of the external and internal structure of insects and of their physiology will be given, and especial attention will be paid to those features which have a bearing on the applied or economic side of the science. In the Senior year, Comstock's "Manual" being used as a text, an outline of the classification will be given, and the orders will be taken up separately; the most injurious insects in each order serving as types. The collection contains examples of these in all their stages, and the laboratory work will be largely directed to the practical handling of and dealing with the insects in all forms. Insecticides and insecticide machinery will be taken up in the last term and the underlying principles of their successful use will be taught.

For students of Agriculture, not candidates for a degree, provision has been made for College instruction by means of the College Extension system, and in a winter lecture course of six weeks at the College.

**COURSE IN CIVIL ENGINEERING AND MECHANICS.**

During the last three years, the students in this course are instructed in Descriptive Geometry, Analytic Geometry, Railroad Curves, Differential and Integral Calculus, Analytic Mechanics, Hydromechanics, Civil Engineering, Bridge-Building and Geodesy, and have practice two afternoons a week in Draughting, with Exercises and Problems in Geometrical Constructions, in Descriptive Geometry,

Topographical, Mechanical and Architectural Drawing and in Graphical Statics.

These subjects, with the exception of Geodesy, are taught by means of text-books, supplemented with numerous practical examples in Descriptive Geometry, Analytic Geometry, Railroad Curves, Differential and Integral Calculus, Statics, Kinematics and Kinetics, Hydrostatics and Hydrokinetics, Roofs and Bridges. Geodesy is taught by means of lectures, including many practical examples from the United States Coast and Geodetic Survey, which the student is required to work out. He is taught how to measure base-lines and reduce them to the sea-level, how to measure angles and adjust them by the method of least squares, and how to compute latitudes, longitudes and azimuths from the field notes. The object of this course is to ground the student well in mathematics, and to give him a substantial knowledge of the theory of civil engineering.

#### COURSE IN CHEMISTRY.

During the last three years, students in this course are instructed in General, Experimental and Agricultural Chemistry, Crystallography, Blowpipe Analysis, Descriptive and Determinative Mineralogy, Analytical, Organic, Applied and Theoretical Chemistry.

The course of study depends, to some extent, upon the student's future pursuit in life.

EXPERIMENTAL CHEMISTRY is taught in the recitation-room by carefully-conducted quizzes and full work in the laboratory. The student's first and general knowledge of chemistry is obtained by his own observation.

**BLOWPIPE ANALYSIS** comprises the study of the various reactions and the analysis of a number of substances. Laboratory work is accompanied with constant quizzing in the recitation-room.

**GENERAL CHEMISTRY** is taught from a text-book, fully illustrated by experimental lectures, during two terms of the Sophomore year.

**ORGANIC CHEMISTRY** begins in the third term of Sophomore year.

In the first and second terms of Junior year the subject is continued by those in the Chemical Course only. The student is constantly questioned and expected to show a thorough knowledge of all principles developed in the text-book. He also is given imaginary problems and taught how to plan an investigation with carbon compounds, thereby gaining a theoretical knowledge of the methods of research in this subject. Laboratory work follows in the Senior year.

**ANALYTICAL CHEMISTRY.**—The student commences with experiments on bodies of known composition, performing those experiments that characterize common, simple substances, until he is perfectly familiar with the reactions, both theoretically and experimentally, the theoretical part being considered in the class-room. Then complicated bodies are examined, until most difficult substances are readily analyzed.

**QUANTITATIVE ANALYSIS** is taught in a similar way. The student first analyzes substances of known composition until perfectly familiar with the peculiar manipulation in this subject. Then he proceeds to substances of unknown composition. Through one College year, instruction is given, with recitations and questionings during the first term.

**STOICHIOMETRY** is taught by lecture, recitation and blackboard drill.

**APPLIED CHEMISTRY.**—The application of Chemistry to the arts and manufactures is taught by lectures and textbook. Whenever it is practicable, the actual products are exhibited to the students, and the manufacturing processes reproduced in miniature. Attention is drawn to the scientific relations and connections between the various manufactures. The great losses by imperfect methods of manufacture and by waste products are pointed out, and the student is taught to see the true economy of production. Illustrative of the lectures, visits are made to various manufacturing establishments, of which there are a number in and about New Brunswick, and an opportunity is given to see manufacturing operations in actual working.

**PRINCIPLES AND THEORIES** of Chemistry having recently developed in a very remarkable way, form a most important branch of Chemistry. Accordingly, the subject extends throughout the Senior year.

**THESIS.**—After finishing experimental organic chemistry, the student takes up work for his thesis chosen by him, but subject to the approval of the instructor.

**MINERALOGY** is taught in the Junior year. In the second term there is a course of lectures in Descriptive Mineralogy, in which the general characters of minerals are discussed, and some of the most important species are carefully studied. Special attention is paid to CRYSTALLOGRAPHY, as being one of the most distinguishing characteristics, and therefore much used in Determinative Mineralogy, which occupies the third term. In this part of the course the student learns to make the tests by which minerals are distinguished from each other, and becomes familiar with their differences by actual handling and comparison. In this course use is made of the College collections, supplemented by the private collection of the Professor in charge.

**GEOLOGY** is studied in the first and second terms of the Senior year. A text-book is used, but each lesson is explained in advance and fully illustrated by the use of specimens, with which the College is abundantly supplied.

#### COURSE IN ELECTRICITY.

This course is similar to that in Engineering, Electrical subjects being substituted for Railroad Curves, Bridge-Building, Geodesy and Hydromechanics.

Its object is to prepare for electrical pursuits which do not demand, at the outset, a complete professional training.

The laboratory is provided with engines, dynamos,

motors, and other apparatus needed for all sorts of measurement and testing.

Work in the laboratory is required throughout the Junior and Senior years, and consists of a course of experiments designed to familiarize the students with measuring apparatus while training them in careful quantitative operations. The Senior year is occupied in management and testing of electrical machinery, and it is customary to visit electric light and power plants to study industrial practice on its actual scale.

#### COURSE IN BIOLOGY.

While this course is introductory to medical and special biological studies, it is adapted to the purposes of a general education. Scientific and Classical students electing this course, and also Agricultural students, must divide the time nearly equally between three departments (Zoology, Botany, Entomology) during the Junior and Senior years, according to the following

SCHEDULE FOR ELECTIVE BIOLOGY.

	JUNIOR YEAR.		SENIOR YEAR.	
First term.....	{ General Biology of Lower Cryptogams.	General Biology of Lower Invertebrates.	Systematic Entomology.	Anatomy of Lower Vertebrates.
Second term. {	Vegetable Histology.	Zoology of Higher Invertebrates.	Vegetable Physiology.	Anatomy and Histology of Domestic Animals.
Third term..... {	Vegetable Histology.	Anatomy and Physiology of Insects.	Vegetable Pathology.	Systematic and Economic Entomology.

In the Freshman year, second term, two hours a week are required of all students. Orton's Zoology is used as a text-book supplemented by lectures and demonstrations.

The elective work is mainly in the laboratory and is pursued by means of microscope and scalpel. The student sketches and describes the objects studied. Supplementary lectures are given. Each student provides himself with Parker's "Lessons in Elementary Biology" and Packard's "Zoology" (advanced course) for the quiz work; for the laboratory, Dodge's Biology and a small case of instruments.

**BOTANY.**—Laboratory study in Botany begins in the second term of the Junior year, and students then pursue a course in vegetable anatomy with the compound microscope, in which they are introduced to the various kinds of tissues and tissue systems as illustrated in the leaves, stems and roots of the higher plants. In the third term, laboratory practice is continued with the histology of the organs of reproduction, and the collecting of plants in the field begun. Each student prepares an herbarium of at least fifty species, all neatly mounted and fully labeled.

The Seniors, in their second term, have a course of lectures upon Vegetable Physiology, special attention being paid to the origin of varieties through cross-fertilization and other causes. In the laboratory, each member of the class becomes familiar, microscopically, with the histology of cryptogams, particularly those best enforcing the principles in Physiology considered in the class-room. The third term is specially devoted to a consideration of those

low organisms that are so obscurely known under the general term of the fungous diseases of plants, and embracing one branch of Economic Botany, now called Vegetable Pathology.

ENTOMOLOGY.—In the third term of the Junior year, Entomology will be taught, by lectures and laboratory practice, and during this term a knowledge of the external and internal structure of insects and of their physiology will be given. Especial attention will be paid to the morphological and biological side of the science. In the Senior year an outline of the system of classification will be given by a study of leading types of all the orders, and the students will be required during laboratory hours to prepare, classify, and arrange collections, in part made by themselves. A very full collection of the insects of the United States will assist in acquainting the student with the family types. The aim will be to give such a knowledge of the subject as a whole, as will enable the student to specialize without further assistance should he desire to continue the study at the conclusion of the course. Comstock's "Manual" will be used as a text.

#### EXTENSION DEPARTMENT.

The work of the Extension Department has been growing steadily since its inception. During the last year the attendance at the various courses exceeded 1,800, and more than 800 were enrolled in the accompanying classes. The work is conducted in strict accordance with the



methods of "University Extension." A course of lecture-studies consists of the following elements :

- (a) A series of lectures.
- (b) A printed syllabus.
- (c) A class-hour, or hour of conference following each lecture.
- (d) Written exercises by members of the class.
- (e) An examination open to those who have taken the whole course.
- (f) Appropriate credits issued to successful students.

Every part of this work is voluntary. Many simply attend the lectures and do not enroll themselves as students, but all are encouraged to take the full course, since a far better knowledge of the subject can thus be obtained. All courses consist of twelve lecture-studies unless otherwise specified. For the season of 1895-'96 the following courses are offered, to which additions will be made later :

#### AGRICULTURE.

##### SOILS AND CROPS, (6).

By Professor Edward B. Voorhees, A.M.

##### THE FOOD OF PLANTS, (6).

By Professor Edward B. Voorhees, A.M.

##### ANIMAL NUTRITION, (6).

By Professor Edward B. Voorhees, A.M.

##### HOW PLANTS GROW, (6).

By Professor Byron D. Halsted, Sc.D.

ECONOMIC ENTOMOLOGY, (in two parts of six lectures each).

By Professor John B. Smith, Sc.D.

##### APPLICATIONS OF THE PRINCIPLES OF PHYSICS, (6).

By Professor F. C. Van Dyck, Ph.D.

**CONSTRUCTION OF ROADS, BRIDGES AND DRAINS, (6).**

By Professor A. A. Titsworth, M.S., C.E.

**GEOLOGY, (6).**

By Professor Frank L. Nason, A.M.

**THE FINE ARTS.****GREEK, HELLENISTIC AND ROMAN ART.**

By Professor Edgar S. Shumway, Ph.D.

**SIX GREEK SCULPTORS, (6).**

By Professor Edgar S. Shumway, Ph.D.

**OLD ITALIAN AND MODERN FRENCH ART, (13).**

By Professor John C. Van Dyke, L.H.D.

**DECORATION, (6).**

By Burleigh Parkhurst.

**HISTORY AND SOCIAL SCIENCE.****THE BEGINNINGS OF MODERN HISTORY.**

By Professor Edward L. Stevenson, Ph.D.

**THE FRENCH REVOLUTION.**

By Professor Edward L. Stevenson, Ph.D.

**THE FORMATION AND ESTABLISHMENT OF THE UNITED STATES AS A NATION.**

By Professor Edward L. Stevenson, Ph.D.

**THE EASTERN QUESTION, (6 or 12).**

By Professor James F. Riggs, D.D.

**VITAL FORCES IN MODERN HISTORY, (6).**

By Professor James F. Riggs, D.D.

**THE PROTESTANT REFORMATION, (6).**

By Professor James F. Riggs, D.D.

**SOCIOLOGY.**

By Reverend George Hubbard Payson, A.M.

## LITERATURE.

## THE ENGLISH BIBLE, (6).

By Professor William Rankin Duryee, D.D.

## SOME REPRESENTATIVE NAMES IN ENGLISH LITERATURE.

By Professor A. V. Williams Jackson, Ph.D., L.H.D.

## SHAKESPEARE AND THE ENGLISH DRAMA.

By Professor A. V. Williams Jackson, Ph.D., L.H.D.

## SHAKESPEARE.

By Homer B. Sprague, Ph.D.

## A CENTURY OF ENGLISH POETRY.

By Professor Thomas M. Parrott, Ph.D.

## THE GREEK DRAMA.

By Professor Louis Bevier, Jr., Ph.D.

## HOMER AND THE GREEK EPOS, (6).

By Professor Louis Bevier, Jr., Ph.D.

## PHILOSOPHY AND PEDAGOGY.

## THE WORLD'S GREAT THINKERS.

By Professor Jacob Cooper, D.D., D.C.L.

## HOW WE KNOW.

By Reverend John B. Thompson, D.D.

## EDUCATIONAL EPOCHS.

By Professor Eliot R. Payson, Ph.D.

## SCIENCE.

## ASTRONOMY.

By Professor Robert W. Prentiss, M.S.

## BOTANY.

By Professor Byron D. Halsted, Sc.D.

## CHEMISTRY.

By Professor Peter T. Austen, Ph.D., F.C.S.

**ELECTRICITY.**

By Professor F. C. Van Dyck, Ph.D.

**ENTOMOLOGY.**

By Professor John B. Smith, Sc.D.

**GEOLOGY.**

By Professor Frank L. Nason, A.M.

**MINERALOGY.**

By Professor A. H. Chester, E.M., Ph.D., Sc.D.

**PHYSIOLOGY.**

By Professor Julius Nelson, Ph.D.

**ZOOLOGY.**

By Professor Julius Nelson, Ph.D.

The cost of these courses to any organization in the State constituting itself an Extension Centre averages about \$20 a lecture-study, but those requiring illustration with the lantern or by means of experiments are somewhat more expensive. Details will be given on application. This charge entitles a centre to the entire course and to 75 copies of the syllabus. No bill of extras will be rendered. If more than 75 copies of the syllabus are required they may be had at 10 cents a copy. These are the charges for the work under all heads except that of Agriculture. For the courses in Agriculture the price has been set at \$10 a lecture-study. This is only possible through the generosity of friends of the late Dr. George H. Cook, who purpose to develop thus the work begun by him for the benefit of the farmers of New Jersey.

All inquiries should be sent to Louis Bevier, Jr., the Secretary of the Extension Department.

THE NEW JERSEY STATE AGRICULTURAL COLLEGE  
EXPERIMENT STATION.

By the Act of Congress of March 2d, 1887, a law was passed entitled "An act to establish Agricultural Experiment Stations in connection with the Colleges established in the several States under the provisions of an act approved July 2d, 1862, and of the acts supplementary thereto." This act is commonly known as the "Hatch Act," from the active interest taken in its passage by Hon. William H. Hatch, M.C., of Missouri. It authorizes the appropriation of \$15,000 annually for the support of Agricultural Experiment Stations in connection with the Colleges which were established in the several States "for the benefit of Agriculture and the Mechanic Arts," by the Act of Congress of July 2d, 1862.

The Legislature of New Jersey, by its acts of March 16th, 1887, and of March 5th, 1888, designated the Trustees of Rutgers College "as the parties to whom all moneys appropriated by Congress under said acts of Congress or supplements thereto shall be paid for the purposes mentioned in said acts of Congress." The department of Rutgers College known as Rutgers Scientific School is, by law, the State Agricultural College. The Agricultural Experiment Station is established in connection with it.

## GENERAL INFORMATION.

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### EXAMINATIONS.

The classes in both departments are examined at the close of each term. These examinations are partly oral and partly written, and have an important bearing upon the standing of the student in his class.

Unexpected examinations at irregular intervals are held at the discretion of each instructor. The object of these examinations is to cultivate the habit of considering the relations of each day's work to what has been done before, and to stimulate effort on the part of each student to gain a comprehensive knowledge of the subjects studied.

At the end of the first and third terms, the examinations of the classes of the Scientific Section are held in the presence of the Board of Visitors, who then make their semi-annual visits to the institution.

At the end of the third term, each member of the Graduating Class of the Scientific Section is required to present a thesis on some scientific subject, a copy of which is written out upon paper suitable for binding and deposited in the College Library.

The final examination of the Graduating Classes is held four weeks before Commencement, from which time they are subject to such duties as are required for their preparation for Commencement.

Students who receive conditions at the June Examina-

tions must report at College prepared to be examined upon the whole of each of the subjects on which they have conditions, at 10 A. M. on the Tuesday before College opens, in September.

#### GRADUATION.

To all members of the Graduating Class of the Classical Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Arts.

To all members of the Graduating Class of the Scientific Department, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Science.

To students, in either department, who have satisfactorily pursued special courses of study, a certificate is granted stating the studies pursued and the attainments made.

#### CLASS HONORS.

The following regulations have been adopted by the Board of Trustees regarding the graduating exercises at Commencement :

1. There shall be three scholarship honors in each section of the Graduating Class, awarded to those students who shall stand first, second and third respectively, in all the required studies of the Classical or Scientific curriculum, provided that in each individual case the student so standing shall rank among the first four in the major subject or subjects of his elective course. A failure on the part of any candidate to fulfill this condition will render the student standing next in grade of general scholarship

eligible, subject to the same condition regarding the elective course.

2. There shall be no distinction by way of comparison between the scholarship honors of the Classical School and those of the Scientific School.

3. The three scholarship honors of each School shall be designated as follows :

**CLASSICAL SCHOOL.**

**First Honor—Philosophical Oration.**

**Second Honor.**

**Third Honor.**

**SCIENTIFIC SCHOOL.**

**First Honor—Scientific Oration.**

**Second Honor.**

**Third Honor.**

4. An oration to be known as the Rhetorical Honor shall be awarded to that member of either section of the class of those ranking in general grade of scholarship among the first half of his class in all the required studies of the Classical or Scientific curriculum, who shall have received the highest grade in Composition and Elocution during the Junior and Senior years.

A student may receive any one of the three Scholarship Honors and the Rhetorical Honor, but he shall deliver only one oration at Commencement.

5. Two other orations shall be awarded as follows : From a list which shall include those students from both sections of the class who stand in the first half in grade of scholarship in all the required studies of the course, and which shall exclude those who have received Scholarship Honors or the Rhetorical Honor, the two students having the highest grade in Composition and Elocution during the Junior and Senior years shall be chosen as orators.



**SPECIAL HONORS.**

Department or Individual Honors may be granted in each elective subject. Of these there are two in each Classical course, and one in each Scientific course. Such an honor will be granted to that student who stands highest in the particular elective subject, on two conditions:

1. Provided that he stand in the first third of the Classical or Scientific Section of his class in the required studies of his course; and,
2. Provided that he be recommended to receive that honor by the Professor or Professors who have instructed him in the elective subject or subjects.

Competition for individual or department honors shall begin where the courses begin to diverge, *i. e.*, with the first term, Junior year, in the Classical Department, and with the first term, Sophomore year, in the Scientific Department.

**DEGREES AND POST-GRADUATE STUDIES.**

The Faculty will recommend for the degree of Master of Arts or Master of Science candidates otherwise properly qualified, who, after taking the appropriate Bachelor's degree—

1. Shall pursue for at least one year at Rutgers College a course of liberal and non-professional study, approved by the Faculty, and shall, beside the term examinations, pass a thorough examination on that course and present a thesis on some topic connected with it; or,

2. Who, not less than three years after taking the Bachelor's degree at Rutgers College, shall make application for the Master's degree, presenting at the same time a certificate of graduation from a Theological Seminary, a Law School or a Medical School, or of admission to the practice of Law or Medicine ; or,

3. Satisfactory evidence by thesis or otherwise of successful labor in education or literature pursued during three consecutive years and of advanced studies prosecuted ; or,

4. In case of Bachelor of Science, satisfactory evidence of successful professional work actually done and advanced professional studies prosecuted.

The degrees of Ph.D. and Sc.D. may be conferred upon resident graduates of the College who shall pursue for two years prescribed courses of study under the direction of the Faculty.

The conditions will be made known on application.

The degree of Civil Engineer is a professional one, and is, on application, conferred upon graduates of the College who have taken the degree of Bachelor of Science, and subsequently have passed three years in the practice and study of engineering, with results satisfactory to the Faculty.

The applicant is required to furnish a statement of the work upon which he has been engaged, and to present a thesis or discussion of some engineering work which he has done. The application and thesis must be presented to the Secretary of the Faculty at least one month before Commencement.

The degree of Bachelor of Divinity (B.D.) will be conferred on students graduating from the Theological Seminary in New Brunswick, who shall present certificates from the Faculty of the Seminary showing that they have done the special work and successfully passed the special examinations prescribed for that degree.

#### REGULATIONS.

Morning prayers are attended in the College Chapel each morning, except Saturday and Sunday, at 8:40 o'clock.

A Bible Class, attendance at which is voluntary, is held Sunday morning in the College Chapel at 10 o'clock.

A sermon is preached every Sunday morning in the College Chapel at 11 o'clock. Students are required to be present.

They are expected, also, to attend public worship in the afternoon or evening, at such place as their parents or guardians may direct.

No student is allowed to leave the city during term time without permission from the President or the Registrar.

Excuses for absence from all College duties must be obtained from the Registrar.

Unexcused absences are reported to the Faculty; and a student is not allowed to make up the recitations omitted, but receives zero as a mark.

Recitations, except in Elective subjects, are marked on a scale of 100, and the average standing of each student is made up at the end of each term, and sent to his parent or guardian. A mark at examination counts as much as one-third of the term's work up to the time of examination.

If the grade for the term's work previous to the examination, in any subject, fall below 60 per centum of the maximum, the student will be conditioned in that subject.

If the grade of any student in any study at any time fall below 60 per centum of the maximum, his case will be acted on as the Faculty shall deem necessary.

If any student's average grade in any term fall below 60 per centum of the maximum, he will lose his standing in his class, and be required to fall back a year in the course, unless all his deficiencies shall be removed before the opening of the next term.

In Elective courses the only official statement of work done is the announcement, at the end of each term, in each student's report, that he has "passed," or "passed with honor," or "failed." The marks given in elective work are not made public, and do not enter into the ordinary computation of grade. They serve only for the guidance of the Professors concerned and of the Faculty in determining the Scholarship honors at graduation.

If any student shall be found notably deficient in his daily recitations, or at the examination in any of his studies, his case will be reported to the Faculty, and such action by way of discipline will be taken as may be deemed necessary.

No student can be promoted to an advanced class until all his deficiencies are made up; and if he fail to make up all his deficiencies before the opening of the College year, he will cease to be a member of his class. Examinations for making up such deficiencies are held at 10 A. M. on the Tuesday before the opening of the Session in September.

The Faculty are empowered to pass such regulations relative to the number of boarders in each house as they think proper; and students shall board only at such places as are approved by them.

## COLLEGE EXPENSES.

CLASSICAL SCHOOL.		One Term.	One Year.
Tuition,		\$25 00	\$75 00
Public Room Service (Gymnasium, \$6.00; Library, \$3.00;			
Janitor and Fuel, \$15.00),		8 00	24 00
Elective Course in Biology, extra,		5 00	15 00
Elective Course in Chemistry, extra,		5 00	15 00
Elective Course in Physics, extra,		5 00	15 00
Elective Course in Astronomy, extra,		5 00	15 00
Admission Fee,			5 00
Graduation Fee, payable before Senior Final Examinations,			7 00
Certificate Fee, payable after a special or partial course,			5 00
SCIENTIFIC SCHOOL.			
Tuition,		\$25 00	75 00
Public Room Service (Gymnasium, \$6.00; Library, \$3.00;			
Janitor and Fuel, \$15.00),		8 00	24 00
Draughting-Room Fee, extra after Freshman year,		5 00	15 00
Electrical Laboratory Fee, extra,		5 00	15 00
Chemical Laboratory Fee, extra,		10 00	30 00
Biological Laboratory Fee, extra,		5 00	15 00
Admission Fee,			5 00
Graduation Fee, payable before Senior Final Examinations,			7 00
Certificate Fee, payable after a special or partial course,			5 00

All College bills are payable within ten days after the beginning of each term. All checks should be made payable to the Treasurer of Rutgers College.

For information in regard to rooms and board in Winants Hall, see subsequent pages.

Students in the Scientific Courses are required to procure sets of draughting instruments, costing from \$10 to \$20. They are advised to defer the purchase of these instruments until entering College, as they will then have the advantage of procuring them under the direction of the Professor of Draughting.

Students pursuing the Course in Chemistry and the Course in Electricity are expected to provide themselves, at their own expense, with the necessary sets and pieces of apparatus, which may be obtained from the regular apparatus dealers, or from the Laboratory Supplies department. These sets are retained through the year, but at the end of it, if the owners do not wish to keep them, they will be purchased at a fair price. If proper care has been exercised, a small discount only (about 10 per cent.) from the original cost will be made. All breakage and damage to College apparatus will be charged in full.

#### BENEFICIARY AID.

A student who is preparing for the ministry of the Reformed Church in America and who needs pecuniary assistance, may be placed on one of the Beneficiary Funds which the Trustees hold in trust for the purpose; *provided*, that he engage to pursue his studies uninterruptedly until he shall have completed his theological course in one of the theological schools under the care of the General Synod of the Reformed Church in America, in accordance with the requirements of that Church, Art. 2, Sec. 2.

All who are placed on these funds receive \$150 annually.

**VAN BENSCHOOTEN FUND.**—This fund, the gift of the Rev. ELIAS VAN BENSCHOOTEN, in 1814, amounting to \$20,813, was given in trust jointly to the General Synod of the Reformed Church and the Trustees of Rutgers College, to aid in the education of indigent students for the ministry. The students who enjoy the benefits of this fund are appointed by the Trustees of the College on the nomination of the General Synod of the Reformed Church.

**KNOX FUND.**—This fund, consisting of \$2,000, was given by Mrs. REBECCA KNOX, of Philadelphia, in 1815, to the Trustees of Rutgers College, the income from it to be expended for the support of one student in the Theological Seminary.

**W. H. SMOCK FUND.**—WILLIAM H. SMOCK, of Marlboro, N. J., left by his will, to the Trustees of Rutgers College, the sum of \$500, to be invested as a fund, the interest of which should be used to aid in the education of young men for the ministry. This legacy was received in 1859, and has been duly employed since that time for the purpose named.

**MANDEVILLE FUND.**—In 1865, the Trustees of Rutgers College received from the executor of the will of WILLIAM MANDEVILLE, of New York City, the sum of \$2,000, to be invested and the income thereof to be applied to the support of a theological student in the College.

**VOORHEES FUND.**—ABRAHAM VOORHEES, of Franklin Park, N. J., bequeathed by his will \$26,000 to the Trustees

of Rutgers College, the income of which is to be expended in aiding worthy young men who are candidates for the ministry, while pursuing their studies in Rutgers College.

**BROWNLEE MEMORIAL FUND.**—This fund consists of \$2,000, the income of which is to be used for purposes of ministerial education. It was given in 1891 by Mrs. WILLIAM A. BLOODGOOD, of New York, in memory of her father, the late Rev. WILLIAM C. BROWNLEE, D.D., who was at one time Professor of Languages in the College, and afterwards for many years an active and efficient Trustee.

**BOARD OF EDUCATION.**—The Board of Education of the Reformed Church grants aid to young men preparing for the ministry in the denomination. The conditions are that the persons receiving aid shall have been members of some Evangelical Church one year, and at the time members of some Reformed Church. The aid may be obtained either while in College or in the Theological Seminary.

At present the amount given is \$150 per annum. Information may be had by addressing the Secretary of the Board, 25 East 22d street, New York City.

**ROOMS FOR STUDENTS.**—Such rooms in Peter Hertzog Hall as may not be required for the use of the students of the Theological Seminary, are allowed to be occupied by the students of the College who have the ministry in view, and on the same conditions as the members of the Theological Seminary, *i. e.*, free of charge.



## PRIZES.

In every case where it is expected that a prize will be awarded for work done, it is distinctly announced that unless in the opinion of the examiners the work submitted is of such excellence as to merit a prize or prizes, no prize will be awarded.

Whenever a prize requires both an essay and an examination, the essay must be handed in before the hour fixed for the examination.

All prizes are open equally to members of the Classical and Scientific Departments, except in cases where they are specially limited to one department by the donor. Each competitor for a prize must sign a written declaration that the essay or other work offered by him is his original and unaided work. The essays are to be written on a paper of a prescribed kind, and the successful essay is to be deposited in the College Library, before the writer is entitled to the prize.

**SUYDAM PRIZE FOR COMPOSITION.**—This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall write the best English Composition on the subject assigned to the class by the Professor of Rhetoric. Competitors must hand in their compositions on or before April 20th. Subject for 1896: "Lowell as a Lyric Poet and as an Essayist."

**SUYDAM PRIZE IN NATURAL SCIENCE.**—This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall have made the greatest attainments in Natural Science. The examination is upon all the subjects of Natural Science in the College course, Astronomy, Biology (including Physiology and Zoology), Botany, Chemistry, Geology, and Physics, and is conducted by the Professors of those subjects. The questions and answers are required to be written.

**BRODHEAD CLASSICAL PRIZE.**—This prize is the gift of Rev. Dr. JACOB BRODHEAD and his son, J. ROMEYN BRODHEAD, LL D. It is the interest on \$500, *i. e.*, twenty-five dollars, to be given to the best Senior Classical scholar, on the following conditions :

First. "That those who offer themselves as candidates for it shall be subjected to a special examination, at a time to be fixed by the Faculty near the close of the Senior year."

Second. "That the subject of the examination be a passage or play of some classical author (not included in the College programme of studies), to be selected by the Classical Professors, and to be announced at least one month before the time fixed for the examination."

Third. "A subject for an essay shall be announced at the same time, and the essay shall be given in on the day of examination."

Fourth. "Both the examination and the essay shall be taken into account in the adjudication of the prize. A law copy of the essay of the prize-man shall be handed in by him before the medal is put into his hands, to be preserved among the archives of the College."

(a) Text for examination in Greek: The Olympian Odes of Pindar.

(b) Subject of essay to be written in Greek, not less than ten (10) thesis pages: "The Use of the Myth in Pindar's Odes."

**BRADLEY MATHEMATICAL PRIZE.**—This prize was established by the late Hon. JOSEPH P. BRADLEY, LL.D., Class of 1836, and is maintained by his son, CHARLES BRADLEY, Esq., of the Class of 1876. It consists of a valuable Mathematical work, which is to be bestowed on the student of the Senior Class who shall present the best solution of a set of Mathematical problems to be proposed to the class by the Professor of Mathematics before the close of the second term.

**MYRON W. SMITH MEMORIAL PRIZES FOR DECLAMATION.**—These prizes were founded by LYNDON A. SMITH, M.D., of Newark, in the name of his son, Adjutant MYRON W. SMITH, who was a graduate of the College in the Class of 1858, and who gave his life in the late war to the cause of his country. They consist of the interest of \$500 (twenty-five dollars), proportionately appropriated to two medals, one of gold and the other of silver, which are to be awarded respectively to the best and second-best speakers

of the Sophomore Class. Only those students who shall have pursued, in the College, the regular studies of the Classical or a full Scientific course from the beginning of the Freshman year, shall be allowed to contend for these prizes.

The competition for these medals shall take place before a committee of the Faculty, when the best and second-best speakers shall be selected, to whom the medals shall be awarded, and six others shall receive honorable mention in their order of excellence. The medals shall be presented at Commencement.

**TUNIS QUICK PRIZE.**—This prize, the gift of the late P. VANDERBILT SPADER, Esq., of New Brunswick, is the income of \$300, at 5 per centum, and is to be presented to that member of the Freshman Class, Classical or Scientific, who shall pass the best examination in Spelling and in English Grammar.

The examination is to be conducted in writing by the Professor of English Literature, at as early a day as convenient in the second College term, and under such regulations as the Faculty may from time to time establish.

The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition. In case the prize be not awarded in any year, it is to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prize, are subject to change by the Board of Trustees.

**PETER SPADER PRIZES.**—These prizes, the gift of the late P. VANDERBILT SPADER, Esq., are two in number, the income of \$400 and \$300, respectively, at 5 per centum, and are to be awarded to those members of the Sophomore Class, Classical or Scientific, who shall present the best essays on some subject in Modern History, selected by the Professor of History, with the approval of the Faculty.

The subject is to be announced at the close of the Freshman year, and the competing essays are to be handed in on or before the last Monday in May of the Sophomore year.

The committee annually appointed by the Faculty may decline to award these prizes, or either of them, for want of merit in the essays, or for failure of proper competition. In case the prizes be not awarded in any year, they are to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prizes are subject to change by the Board of Trustees.

Subject for 1896: "Institutions and Social Customs of the Six Nations."

**APPLETON MEMORIAL PRIZE.**—This prize was founded by a gift of \$500, from the Rev. SAMUEL E. APPLETON, D.D., in the name of his mother, Mrs. ELIZABETH APPLETON. It consists of twenty-five dollars, the interest of the above sum, and will be given "to the member of the Senior Class who shall pass the best examination in Moral Philosophy."

(a) For 1896: Examination upon Professor Henry Sidgwick's "Methods of Ethics," pp. 1-115.

(b) Subject for essay: "Legal and Moral Responsibility."

**BOWSER ENGINEERING THESIS PRIZE.**—A prize consisting of a valuable Engineering work is given by Professor E. A. BOWSER, LL.D., to that member of the Engineering Section of the Senior Scientific Class who shall present the best thesis upon some Engineering subject at graduation.

**JOHN PARKER WINNER MEMORIAL PRIZE.**—This prize consists of twenty-five dollars, given by JOHN WINNER, Jr., and his wife, in memory of their deceased son, JOHN PARKER WINNER. It will be open to competition for students in both the Classical and Scientific Sections who are pursuing the study of Mental Philosophy, and will be bestowed on the one who shall pass the best examination on some work assigned by the Professor of Metaphysics.

(a) Work for 1896: Examination upon Janet's "Final Causes."

(b) Subject for essay: "Is there any Rational Basis for Immanent Finality?"

**VAN DOREN PRIZE.**—This prize consists of twenty dollars, the gift of the Rev. WILLIAM H. VAN DOREN, D.D. It is open to competition for members of the Senior and Junior Classes in both sections, and for members of the Theological Seminary.

Subject for 1896, essay limited to 3,000 words: "Methods of City Mission Work."

**JUNIOR EXHIBITION.**—Eight members of the Junior Class in the regular courses are chosen each year, on account of their abilities in Composition and in Elocution, who deliver original speeches at an exhibition held on the Monday evening preceding Commencement. The selection is made by a committee of three persons appointed for that purpose by the Faculty.

A prize of twenty-five dollars, the gift of RALPH N. PERLEE, Esq., of New York City, is awarded by a special committee at the time of the exhibition to that orator who shall be adjudged the best writer and speaker among the contestants.

**HART PRIZE IN ENGLISH LITERATURE.**—A prize of twenty-five dollars is offered to the members of the Sophomore Class for the best essay upon a subject in Literature; the theme is assigned by the Professor of that Department, and the prize is awarded by a committee appointed by him.

Subject for 1896: "Thomas Carlyle."

**SLOAN ENTRANCE EXAMINATION PRIZES.**—See page 19.

**BUSSING PRIZES FOR EXTEMPORE SPEAKING.**—Mrs. ANN VAN NEST BUSSING, of New York City, has given to the College \$1,000, the income of which (fifty dollars per annum) is to be expended each year for books, which shall be selected by the President of the College, and given as follows: The First Prize, of thirty dollars, to that member of the Senior Class who shall prove himself to be the best extemporaneous speaker; the Second Prize, twenty dollars,

to the second-best extemporaneous speaker of the Senior Class. The prizes are to be awarded by the Faculty of the College, or by a committee whom they shall name, and shall be awarded after a public debate to be held in the latter part of the College year. In awarding the prizes, "strict attention shall be given to logical and forcible presentation of thought, full and accurate information as to matters of fact, and grace and effectiveness in delivery." For the sake of training students in the clear expression of intelligent thought upon matters of public interest, each class has an exercise in extempore speaking twice in each term. The subject is announced to the class, and, after five minutes for thought, the members of the class discuss the subject or debate the question before a committee.

**VAN VECHTEN PRIZE.**—A. V. W. VAN VECHTEN, Esq., of New York City, has founded, in honor of his mother, the late LOUISA VAN VECHTEN, and his father, Rev. SAMUEL VAN VECHTEN, D.D., a prize of sixty dollars, by the gift of \$1,000, the prize "to be given annually to that student of Rutgers College who shall be adjudged by the Faculty of the Theological Seminary of the Reformed Church of America, at New Brunswick, to have presented an article, original with himself, and the best submitted—the most conclusive and inspiring to strengthen faith in and love for Foreign Missions" The essays are limited to 3,000 words, and are to be presented on or before May 1st of each year.

Subject for 1896: "The Service Rendered to the World by Dr. David Livingstone."



**CLASS OF 1876 POLITICAL PHILOSOPHY PRIZE.**—The Class of 1876 has given to the College one thousand dollars (\$1,000) as the foundation of a Prize Fund (which they express the hope that they may increase from time to time, until it shall be sufficiently large to establish a Fellowship), for the encouragement of the study of Political Philosophy. The income of this fund is to be awarded each year "to that member of the Senior Class (either Classical or Scientific) who shall be adjudged entitled to it, \* \* \* on the basis of an original essay on some subject in Political Philosophy, assigned by the Professor of that science in the College, and upon a competitive examination in a text-book also selected by him;" the committee of award to consist of "three competent persons selected by the Faculty of the College, at least one member of the committee to be a member of the Class of 1876 as long as any may be living."

(a) An examination upon Aristotle's "Politics."

(b) Subject of essay for 1896: "Theories of the State."

**BRADLEY PRIZE IN ROMAN LAW.**—This prize was founded by the Hon. JOSEPH P. BRADLEY, LL.D., late Associate Justice of the Supreme Court of the United States, and is maintained by his son, CHARLES BRADLEY, Esq. It consists of a valuable work on Roman Law.

The examination upon text will be: Justinian Inst., II., Titles 3-5; Justinian, Digest, Book VII., Title 1; Book VIII., Titles 1, 6; Fragmenta Vaticana, §§ 41-93.

The subject of the essay for 1896 will be: "The Law of Servitudes."

The prize may be competed for by Seniors.

**CLASS OF 1866 ELECTRICAL SCIENCE PRIZE.**—The Class of 1866, being the Centennial Class after the grant of the first charter, has established a prize of fifty dollars, to be awarded to that member of each graduating class who has taken a full course leading to the degree A.B. or B.S., including the higher mathematics and physical laboratory practice, and who has shown, in the judgment of the Faculty, the greatest degree of proficiency in the science of Electricity.

A special examination, conducted by an appropriate committee of the Faculty, will be held Saturday, May 16th, 1896, at 2 P. M., to select the recipient of the prize. If, in the opinion of the committee, none of the competitors deserve the prize, it will be withheld.

**DELTA PHI SENIOR ORATOR PRIZE.**—A prize of twenty-five dollars is offered by the Epsilon Chapter of the Delta Phi Fraternity to that member of the Senior Class who shall write and pronounce the best English Oration.

The basis of award of this prize shall be as follows:

Essays shall be written upon any one of certain subjects designated by the Faculty and submitted to a committee thereof.

From these essays, the best, not to exceed five in number, shall be chosen, and their writers having given these essays such form as may best suit the purpose, shall pro-

nounce them in public before a committee appointed by the Faculty, who shall thereupon adjudge the prize.

**LUTHER LAFLIN MEMORIAL PRIZES.**—These prizes are given by LUTHER LAFLIN KELLOGG, Esq., of New York City, in memory of his grandfather, LUTHER LAFLIN, deceased.

The first prize of one hundred dollars will be open to students of either the Junior or the Senior Class in both the Classical and Scientific Sections, and will be bestowed on the one who shall pass the best examination on some work and shall submit the best essay on some theme assigned by the Professor of Metaphysics.

(a) An examination upon Aristotle's "Metaphysics," Books I.—XIII.

(b) Subject for essay in 1896: "Philosophical Conception of Creation: A Discussion of the Genesis of the Universe Founded upon the Greek Idea of the Equivalence and Convertibility of 'The One' and 'The Many.'"

The second prize of fifty dollars will be open to students of either the Junior or the Senior Class, in the Scientific Section only.

(a) An examination upon Jevons' "Principles of Science."

(b) Subject for essay in 1896: "Is Teleology Necessary to the Construction of a Scientific System?"

**BARBOUR PRIZES IN SPEAKING.**—These prizes, two in number, of the value of fifteen dollars and ten dollars respectively, are offered by the Instructor in Elocution.

The eight members of the Freshman Class of either section in regular course who shall stand highest in Elocution during the entire year may compete before a committee appointed by the Faculty.

**PRIZE IN LOGIC (\$50).**—Open to Classical Students in full standing only.

(a) Examination upon Ueberweg's "System of Logic and History of Logical Doctrines" (English translation by Lindsay).

(b) Subject for essay: "Does the Content of Logic Correspond with the Content of Existence?"

**PRIZE IN LOGIC (\$50).**—Open to Scientific Students in full standing only.

(a) Examination upon Mill's "A System of Logic." (Eighth edition.)

(b) Subject for essay: "Criticism of Bacon's, and Other Modern Objections, to Aristotle's Syllogism as an Organ of Reasoning."

**HONORABLE MENTION FOR WORK OUTSIDE THE COURSE DONE WITHOUT REFERENCE TO A PRIZE.**—For the encouragement of independent reading and study and original investigation, under the direction of the Faculty, honorable mention is made of students who give evidence of thoroughness in such work, and pass a satisfactory examination.

## BUILDINGS AND EQUIPMENT.

**QUEEN'S COLLEGE**—Erected 1808-1809. This building occupies the central position of the group of College buildings. It contains nine recitation-rooms, a commodious lecture-hall and the offices of the President and of the Registrar.

**THE FINE ARTS BUILDING**—Erected 1841-1842. The residence of former Presidents of the College has been refitted for the uses of the Fine Arts Department of the College, and is known as The Fine Arts Building. It contains the art collections of the College, including "The Thomas L. Janeway, M.D., Memorial Collection" of casts and photographs, and the various gifts of friends of the institution.

The pictures, models, casts and photographs are arranged to represent, as far as possible, the art of the world. A new lecture-room, having adequate facilities for illustrating lectures by the stereopticon and otherwise, is in use, and the arranging and classifying of the Museum is going forward. Acquisitions are being continually made to the Museum, and every facility for illustrating the history of art is being added to the department. Besides the lectures of the Professor in charge of this department, subjects related to the fine arts will be treated from time to time by other lecturers.

**The Thomas L. Janeway, M.D., Memorial Collection** to illustrate Classical Archæology, is the gift of the heirs of Dr. THOMAS L. JANEWAY, of the Class of 1863.

It already includes (1) eight casts from marbles typical of the chief periods in the history of sculpture. These casts were manufactured by Brucciani & Co., of London. (2) Five hundred casts from engraved gems (cameos and intaglios) and coins, Greek and Roman. These were selected with an eye both to the study of the development of the art and to the especially full illustration of its best achievements. The workmanship on these casts is that of Augustus Ready, of the British Museum. (3) Eight hundred stereopticon slides, of which all but eighty-two were made by the well-known Levy, of Paris. (4) One thousand photographs and restorations. Among the photographers are Bonfils, of Beirût; Sommer, of Naples; Anderson, of Rome; Mansell, of London; Lombardi, of London; Quaas, of Berlin; Hauteœur, of Paris.

The collection, made in Europe by a member of the College Faculty, is designed to illustrate the topography, art, life and literature of Ancient Greece and Rome, and for this purpose is used constantly by College classes.

VAN NEST HALL was erected in 1845, and named for Abraham Van Nest, Esq., a liberal trustee, in recognition of his services and gifts to the College.

In 1893 it was beautified by the addition of a stone porch, the gift of Mrs. Ann Van Nest Bussing, daughter of Abraham Van Nest, who at the same time refitted the eastern portion of the second story into a handsome hall

for the regular and occasional exercises of the students in Elocution.

During the same year the Trustees added a third story to the original building, thus creating a large and well-lighted room for the use of the classes in Draughting. On the second floor is another room for the advanced work in Graphics.

The rooms of the Peithessophian and Philoclean Literary Societies are on the first floor.

The building also contains the collections for illustrating the instruction given in the Engineering courses, comprising a great variety of models showing details of construction in wood, iron and stone, with a full set of Schröder and many Olivier models in Descriptive Geometry, besides blue prints, working drawings and lithographs of roof and bridge trusses. A complete outfit of Engineering and Surveying instruments is owned by the College for the use of the students in the Surveying classes.

THE DANIEL S. SCHANCK OBSERVATORY, erected in 1865, is a two-story brick building, with revolving dome, constructed especially for astronomical work. It contains in the main part the equatorial refracting telescope, mounted on a pier of solid masonry extending several feet below the surface of the ground, and detached from the floors, through which it rises, so as to be unaffected by the tremors of the building. The telescope is eight feet four inches in focal length, with an aperture of six and one-half inches, and was made by the late Henry Fitz, of New York. It has a small telescope attached for a finder,

a driving clock, a position micrometer, a number of eye-pieces of various powers ranging from 50 to 600 and a solar attachment for the study of sun-spots. The declination circle is ten inches in diameter, reading by verniers to one minute of arc, and the hour circle, seven and one-half inches in diameter, reads by verniers to six seconds of time.

On the west side of the main part is an extension for transit observations. The meridian circle used for this work was made by Stackpole, of New York, and has an object-glass four inches in diameter and four feet ten inches in focal length, with circles seventeen inches in diameter, reading by two microscopes with micrometer screws to single seconds of arc. The diaphragm carries one horizontal and seven vertical wires. There is also a striding spirit-level and an apparatus for reversing the axis of the instrument. The bearings rest on two stone pillars, supported by piers of masonry.

The observatory has also a sidereal clock, by Wm. Bond & Son, the gift of John Clark, Esq., of New Brunswick, with an electrical break-circuit; a mean solar clock, the gift of the Peithessophian Society of Rutgers College, and a reflecting circle, the gift of the Philoclean Society of Rutgers College, and several barometers and thermometers.

The observatory is in connection with the Western Union Telegraph line, so that time-signals may be exchanged with other observatories. The whole building and the instruments are illuminated by the electric light. The instruments are all in good working condition, and the student of practical astronomy has here unusual facili-



ties for learning the theory and use of astronomical instruments. The observatory is used in connection with the course in general astronomy to give a knowledge of the sun, moon, planets, etc. Those who elect Mathematics and Astronomy receive instruction in the use of the instruments and take part in the observations. Post-graduate students can take a still more extended course.

The longitude of the observatory is  $0^h 10^m 25.08^s$  east of the old Naval Observatory, Washington, D. C.

The latitude is  $40^{\circ} 29' 57.6''$  N.

**GEOLOGICAL HALL.**—Erected 1871. The Physical Department occupies seven rooms on the main floor, and three in the basement. There are two lecture-rooms, an apparatus-room, a general laboratory, one laboratory for work requiring even temperature, a battery-room and an office.

The lecture apparatus comprises the usual instruments. The laboratories contain general apparatus, such as dividing engine, a set of United States standard weights and measures, metric standards, spherometer, plainimeter, etc. Among the special apparatus are a steam engine, a gas engine, electric motors of various patterns, a storage battery, a model Edison three-wire plant of about two hundred lights capacity, a full set of electrometers, galvanometers and rheostats. The reference-books most frequently consulted are kept in the rooms of the department, ready for instant use.

In the large exhibition-room in the Geological Building the various collections in Natural History are displayed. Through the indefatigable perseverance of the late Dr.

George H. Cook, who was especially interested in this side of the College equipment, very valuable collections have been secured, illustrating a wide range of subjects.

The collection in Lithology is quite complete, all the well-known rocks being illustrated. The rocks of Europe are particularly well shown. There is a very fine collection to illustrate Palæontology, which, while it well covers the whole subject, is especially rich in the fossils of this State. These two collections occupy the cases on the north side of the room. The large collection of shells, to illustrate Conchology, is displayed to good advantage in a series of table-cases in the gallery. The collection of minerals occupies the cases on the south side of the room, and is quite full, though there are still many gaps in it. The varieties found in this State are well represented. One case at the east end of the room is filled with specimens of stone implements and ancient pottery, many of which have been found near New Brunswick, and which illustrate prehistoric Anthropology. Two large central cases contain the Beck Collection of Minerals, and two others are filled with the rocks, clays and iron ores of New Jersey.

During the past two years an attempt has been made at a systematic arrangement of these collections. The minerals have been carefully and completely arranged and labeled in such a way that they can be conveniently studied. The rocks and fossils are now undergoing the same treatment, and will be in complete order before the end of the present year. It is intended to treat all the collections in a similar way, each label giving the donor's name whenever it can be obtained.

Donations are solicited from friends of the College to increase its collections, and to aid in the illustration of any of the subjects taught.

**THE KIRKPATRICK CHAPEL AND LIBRARY**—Erected 1872—is built of brownstone, in the French Gothic style of the Fourteenth Century. The auditorium is attractive, having a roof of opened timber, finished in black walnut and stained pine. On the walls hang numerous portraits of former officers and benefactors of the institution. It has a seating capacity for 350 persons.

Back of the Chapel is the large room designed for the President's classes, and adjoining is the assembly-room for the Trustees. Above these rooms is the Library.

#### LIBRARY.

The Library of the College, containing 32,000 volumes, is open for consultation during each term as follows: On Mondays, Tuesdays, Wednesdays, Thursdays and Fridays, from 8 to 8:40 A. M., and from 12 M. to 12:50 P. M., and from 2 P. M. to 4:30 P. M.; on Saturdays from 9 A. M. to 12:50 P. M., and from 2 to 4:30 P. M. Students are allowed free access to the books, and are encouraged to become familiar with the proper methods of using a library for literary work.

In 1887, the late P. VANDERBILT SPADER, Esq., of New Brunswick (a member of the Class of 1849), gave to the College his personal library, valued at \$15,000, and consisting of about 5,000 books, among them many very valuable art volumes, and collections especially rich in State and local history, and in books of reference. By his will

the College has received \$10,000, the income of which is to be expended for the maintenance and increase of the P. Vanderbilt Spader Library Gift.

By the gift of a permanent fund of \$1,000 from JAMES SUYDAM, Esq., supplemented by gifts from other sources, the library is supplied with the leading periodical publications in the various departments.

By the courtesy of the Theological Seminary of the Reformed Church, the Sage Library of more than 40,000 volumes is opened to the students of Rutgers College for consultation; and under certain limitations books are drawn from it as well. It is within four minutes' walk of the College campus.

THE STATE LABORATORY of the New Jersey Agricultural Experiment Station was authorized by an act of the Legislature approved April 23d, 1888. and the building was well advanced at the close of that year. It affords accommodations for the uses of the State and Agricultural College Stations, and by the courtesy of the Board of Managers of the State Station, who also constitute the State Board of Visitors to the Agricultural College, for the laboratory and class-room work of the students of the Agricultural College who are pursuing the regular and special courses in Agriculture, Chemistry and Biology.

The Agricultural and Biological departments have an equipment for purposes of instruction, consisting of—

(a) College Farm—equipped with modern farm buildings and arrangements, improved farm implements, including corn-harvesters, potato-diggers, seed-planters, engine and boiler, cutters and crushers for fodder, hay-loaders

and mowers. The dairy is equipped with the leading cream separators, milk coolers and bottles, Babcock tester, etc. A poultry-house has recently been erected, which is provided with incubators and adequate facilities for experiments in the breeding and care of fowls.

In the early summer of 1895 an irrigation plant was placed upon the farm, designed to supply the water needed by vegetables and fruits on at least ten acres.

(*b*) Laboratories—separate rooms for Botany, for Entomology and for Zoology have been equipped with tables, accessory microscopic apparatus, histological reagents, microtomes, material for dissection, eighteen compound microscopes (Bausch and Lomb's, Reichert's and Leitz's), giving powers up to 800 diameters; also many dissecting microscopes.

(*c*) Auzoux Models—illustrating the structure of Man, Horse, Bird, Reptile, Fish, Mollusc, Worm, Insects (Cockchafer, Silkworm larva and moth, Honey-bee and its work) and Plants (various flowers, fruits and fungi).

(*d*) Charts (including many of Leuckart's charts)—illustrating the various parts of the living world; also many photographs and lantern slides.

(*e*) Cabinets—a collection of slides illustrating histology and the anatomy of minute animals, especially the insects; also a collection of 5,000 species of insects systematically arranged; also a collection of nearly 25,000 plants.

(*f*) Museums—a collection of stuffed animals and alcoholic specimens systematically arranged, 60 large boxes containing a collection of injurious insects and examples of their work, a systematic collection of over 5,000 species

of American insects, preparations of pathological plant specimens, a collection illustrating the biology of the oyster, its messmate and enemies, and a fine systematic collection in Conchology.

(g) Besides this equipment for direct instruction, the student has brought under his observation the equipment of the research laboratories of the experiment stations in working operation, such as the processes and instruments used in the study of milk, soils, fertilizers, bacteria, mycology, micro-photography, insecticides, fungicides and other experiments relating to agriculture.

The facilities for teaching Chemistry are fully equal to the demands. The two laboratories furnish abundant room to the students, and are equipped with filter-pump, water-blast and tables for organic analyses, besides the ordinary facilities found in all laboratories. An adjoining room has been fitted up as a department library, in which are standard works of reference and the important chemical journals on file. The students are encouraged to spend all spare time in this room. The lecture-room is abundantly lighted, and the table well fitted for experimental lectures. Special pieces of apparatus are constantly acquired, particularly to illustrate the more difficult points in the new developments of Chemistry, and for investigation. The collection to illustrate the lectures on Applied Chemistry is growing. Contributions are earnestly solicited.

WINANTS HALL—DORMITORY—Erected 1890. This building serves as a dormitory and refectory for such students as choose to lodge and board at the College. It accommodates 100 students. The rooms are arranged

in suites of a study and two sleeping-rooms, for two and three room-mates, and there are a few single rooms. Special attention is given to light, ventilation and sanitary appliances, and to the necessary quiet retirement and privacy of the students.

Ample provision is made for fire-escapes and other securities against accidents.

The entire building is heated by steam. Bath-rooms, lavatories and store-rooms are on each floor.

The large study-rooms are each furnished with two study tables and two chairs. The bed-rooms are each furnished with a solid oak set, consisting of bedstead (springs and mattress), bureau and washstand. The remaining furniture, such as sheets, pillows, pillow-cases, coverlets, towels, bowl and pitcher, etc., are to be supplied by the occupant. The schedule of prices for single rooms and suites of rooms includes heat and gas light.

In drawing for choice of rooms, the order of classes will be followed, precedence being given to the Seniors.

Rooms are to be taken for the full year. Rent is payable in advance, one-third at the beginning of each term. Agreement to pay rent is for the entire suite, and must be signed by the student who draws it, or his guardian. Rooms may be occupied from the Monday preceding the opening of the College year to the Saturday following Commencement.

During the present year board is furnished by the matron at \$3.75 a week.

The drawing for choice of rooms for the year 1896-'97 will take place in the Registrar's office on Wednesday, June 3d, 1896, at 2:30 P. M.

SCHEDULE OF PRICES A WEEK OF ROOMS IN WINANTS  
HALL FOR 1896-'97.

The following schedule gives the weekly rental for each occupant of the respective rooms, and no more may occupy any suite than is indicated in parenthesis after the room numbers. One student occupying a double room, or two students occupying a room intended for three, will be charged the full rental for the suite:

**\$1.00**—11 (1), 15 (1), 16 (1), South, First Floor; 116 (1), 117 (1), 121 (3), North; 127 (3), South, Fourth Floor.

**\$1.25**—5 (3), North; 9 (2), 20 (2), South, First Floor; 118 (2), North; 132 (2), 135 (1), 136 (1), 137 (2), South, Fourth Floor.

**\$1.50**—70 (3), 76 (1), 77 (1), 81 (3), North; 102 (3), 113 (3), South, Third Floor.

**\$1.75**—23 (3), 29 (1), 30 (1), 34 (3), North; 55 (3), 66 (3), South, Second Floor; 108 (1), 109 (1), South, Third Floor; 124 (2), Middle; 140 (1), North, Fourth Floor.

**\$2.00**—61 (1), 62 (1), South, Second Floor; 87 (2), 90 (2), 96 (2), 97 (1), 99 (1), Middle, Third Floor.

**\$2.25**—2 (2), North; 12 (2), 17 (2), South, First Floor; 40 (2), 43 (2), Middle, Second Floor; 73 (2), 78 (2), North; 105 (2), 110 (2), South, Third Floor.

**\$2.50**—26 (2), 31 (2), North; 53 (2), 63 (2), South, Second Floor.

**THE ROBERT F. BALLANTINE GYMNASIUM.**—By the generosity of Robert F. Ballantine, Esq., of Newark, N. J., a Trustee of the College, a building was completed in 1894 which affords unexcelled opportunities for physical instruction and exercise, and for military instruction and drill. This Gymnasium is situated on spacious grounds given to the College by another Trustee, James Neilson, Esq., of New Brunswick. The building is in two parts, the front portion being devoted to purposes of administration, and the rear, the gymnasium and drill-room proper.



Ample offices are provided for the instructor in military science and the instructor in physical culture. The gymnasium and drill-room combined afford an unobstructed space one hundred feet by sixty in dimensions. The apparatus is of the most approved kind, and was chosen by the director of one of the best systems of physical instruction in the country. Suspended from the truss-roof is a running-track two hundred and eighty feet in length. Space is also afforded for the armory of the Scientific School. On the one side of the administration building is a large room for lockers, on the other side a room for military equipments. On the floor above apartments are provided suitable for all the uses incident to these purposes. In the basement are a swimming-tank, shower and needle baths, a ball cage and four bowling-alleys of perfect construction.

The building is a fine specimen of the colonial style of architecture.

**ATHLETICS.**—In order to secure for the students the benefits of out-of-door exercise, athletic sports are encouraged by the provision of adequate facilities. Rightly controlled, such sports have shown themselves beneficial both to the health of the students and to the quality of the work done, and are manifestly in the interest of good order. The more prominent athletes have been generally among the more earnest and successful students. The proper control of athletics has been secured by the organization of an incorporated athletic association, supported by the students and managed by a board of nine trustees, chiefly composed of resident alumni. In this board the Faculty has always

had one or more representatives, and in this way a cordial co-operation has been steadily maintained between Faculty and students, avoiding the need for the exercise of direct authority.

**THE NEW ATHLETIC FIELD.**—By the generosity of James Neilson, Esq., of New Brunswick, an alumnus and Trustee of the College, there is now provided an athletic field, containing more than five acres and at a walking distance of about eight minutes from the College campus.

About five thousand dollars were spent in improving this field and providing proper accommodations. It is furnished with a commodious grand stand, with dressing-rooms and bath-rooms attached, and with everything to make it as nearly perfect as possible and to render it practically useful to the students.

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RUTGERS COLLEGE  
PREPARATORY SCHOOL.

FOUNDED 1766.

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E. R. PAYSON, PH.D., HEAD-MASTER.

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This School is under the direction of the Trustees of Rutgers College, and prepares boys for any American College or Scientific School.

It is completely equipped with suitable buildings and provided with a full corps of instructors.

For catalogue, address

E. R. PAYSON, PH.D.,  
New Brunswick, N. J.

## REGISTER.

## 1. SOPHOMORE ORATORS, CLASS OF 1897.

In the order of their appointment according to merit:

PERCY VAN ORDEN.	ANDREW JUDSON WALTER.
JOHN NELSON CARPENDER, JR. }	GEORGE STANLEY FERGUSON.
CLIFFORD PHILIP CASE. }	ALFRED ERICKSON.
FRANCIS AUGUSTUS SEIBERT.	WILLIAM JAMES MORRISON, JR.

## 2. JUNIOR ORATORS, CLASS OF 1896.

JUNIOR EXHIBITION, JUNE 17, 1896.

WILLARD CONGER.	*IRVING LEE REED.
LANE COOPER.	HENRY MARELLI.
LESTER INGLIS.	HENRY DE WITT TREMPER.
THOMAS HERBERT LETSON.	JOHN BROWNLEE VOORHEES.

## 3. GRADUATING EXERCISES, CLASS OF 1895.

COMMENCEMENT, JUNE 12, 1895.

GEORGE FRANCIS SCULL, JR., . . . . .	Atlantic City, N. J.
First Scientific Honor.	
†CHARLES AUGUSTUS WECKERLY, . . . . .	Atlantic City, N. J.
Second Scientific Honor.	
HENRY UNDERHILL HART, . . . . .	Neshanic, N. J.
Oration.	
CHARLES E. CONOVER, . . . . .	Manalapan, N. J.
Third Scientific Honor.	
EUGENE BOGERT, . . . . .	Harrington, N. J.
Oration.	
HERMAN CHARLES WEBER, . . . . .	Brooklyn, N. Y.
First Classical Honor.	
‡GEORGE SULLIVAN LUDLOW, . . . . .	New Brunswick, N. J.
Third Classical Honor.	
DAVID CARART, . . . . .	Rahway, N. J.
Second Classical Honor.	
GEORGE SULLIVAN LUDLOW, . . . . .	New Brunswick, N. J.
Rhetorical Honor.	
WINFRED RUGAN ACKERT, . . . . .	Poughkeepsie, N. Y.
Master's Oration.	

\* Absent on account of illness.

† Excused.

‡ Excused on account of delivering the Rhetorical Honor Oration.

## 4. HONORS IN SPECIAL SUBJECTS.

In Greek, . . . DAVID CAHART. In Latin, . . . DAVID CAHART.  
In Mathematics, . . . CHARLES AUGUSTUS WECKERLY.

## 5. DEGREES CONFERRED.

## Degree of Bachelor of Arts Conferred on Candidates in Course.

DAVID CAHART,	JOHN CONANT LOUD,
FRANK CORNELL EATON,	GEORGE SULLIVAN LUDLOW,
HENRY UNDERHILL HART,	JOHN PROVOST STOUT,
GEORGE JACOB JANEWAY,	THOMAS MORRIS STRONG,
FREDERICK WILLIAM JOHANKNECHT,	WARREN CLARK VAN SLYKE,
DWIGHT CHAPIN LEFFERTS,	HERMAN CHARLES WEBER.

## Degree of Bachelor of Science Conferred on Candidates in Course.

JOHN GARRETSON BLACKWELL,	EUGENE LINDSLEY HURLEY,
EUGENE BOGERT,	CHARLES TOWNSEND LETSON,
JOHN HENRY CARNES,	ROBERT BALLANTINE LITTELL,
ABRAHAM SCHUYLER CLARK,	GABRIEL LUDLOW,
EDGAR STANLEY CONKLIN,	WILLIAM FRANK PARKER,
CHARLES E. CONOVER,	ROBERT STEVENS PARSONS,
CHARLES MEIRS DENISE,	FREDERICK HARRISON PIERSON, JR.,
FREDERICK WILLIAM ELLS,	CLARKSON RUNYON, JR.,
JOHN MULFORD ENRIGHT,	THOMAS FRENCH RUSSUM,
AMOS HAINES FLAKE,	GEORGE FRANCIS SCULL, JR.,
HENRY SEELEY HAMPTON,	ALEXANDER BROKAW WAY,
	CHARLES AUGUSTUS WECKERLY.

## Degree of Master of Arts Conferred.

WINFRED RUGAN ACKERT, '92,	CHALMERS PETER DYKE, '92,
JOSEPH FREDERICK BERG, '92,	ROBERT EMMET FARLEY, '92,
THOMAS WESTON CHESTER, '92,	JESSE CHARLES HAZZARD, '92,
HARRY THORNTON DAYTON, '92,	MITSUYE OI, '92,
	FRANK VOORHEES, '92.

## Degree of Master of Science Conferred.

PHILANDER BETTS, 8d, '91,	PETER CONOVER FIELD, '92,
SAMUEL ARTHUR JOHNSON, '91,	GEORGE HAMPTON WYCKOFF, '92.

## Degree of Bachelor of Divinity Conferred.

CHARLES EDWARD CORWIN,	FREDERICK KLEINHOLD SCHILD.
------------------------	-----------------------------

## Degree of Civil Engineer Conferred.

JOHN CHARLES AYDELOTT, '91.

## Honorary Degrees Conferred.

A.M. MAXIMILIAN KRESSENSTEIN KRESS, . . .	New York City.
M.S. WILLIAM EUGENE BREAZEALE, . . .	Anderson, S. C.
Sc.D. MARTIN NEVIUS WYCKOFF, . . .	Tokyo, Japan.
LL.D. GEORGE CRAIG LUDLOW, . . .	New Brunswick, N. J.
D.D. EDWARD GRIFFIN READ, . . .	Somerville, N. J.
D.D. DONALD SAGE MAC KAY, . . .	Newark, N. J.

## 6. PRIZES AWARDED.

## SENIOR PRIZES.

Suydam Prize in Composition, . . .	HERMAN C. WEBER.
Brodhead Classical Prize, . . .	DAVID CAHART.
Bradley Mathematical Prize, . . .	CHARLES A. WECKERLY.
Appleton Memorial Prize in Moral Philosophy, . . .	FRANK C. EATON.
Bowser Engineering Thesis Prize, . . .	CHARLES A. WECKERLY.
Bussing Prize for Extemporaneous Speaking, 1st, . . .	GEORGE S. LUDLOW.
Bussing Prize for Extemporaneous Speaking, 2d, . . .	FREDERICK W. JOHANKNECHT.
Class of '76 Political Philosophy Prize, . . .	GEORGE F. SCULL, JR.
Class of '66 Electrical Science Prize, . . .	FREDERICK W. ELLS.
Delta Phi Senior Orator Prize, . . .	GEORGE S. LUDLOW.

## JUNIOR AND SENIOR PRIZES.

Van Vechten Prize for Essay on Foreign Missions, . . .	HERMAN C. WEBER, '96.
Van Doren Mission Essay Prize, . . .	HERMAN C. WEBER, '96.
Prize in American Literature, . . .	LANE COOPER, '96.
Bradley Prize in Roman Law, . . .	DAVID CAHART, '96.
Luther Lafin Memorial Prize in Metaphysics, . . .	{ GEORGE S. HOBART, '96. CHARLES G. MALLERY, '96.
Classical Prize in Logic, . . .	{ FREDERICK W. JOHANKNECHT, '96. GEORGE S. LUDLOW, '95.

## JUNIOR PRIZES.

John Parker Winner Memorial Prize for Mental Philosophy, . . .	LANE COOPER.
First Perlee Junior Orator Prize, . . .	WILLARD CONGER.
Second Perlee Junior Orator Prize, . . .	JOHN B. VOORHEES.

## SOPHOMORE PRIZES.

Myron W. Smith Memorial Prize for Declamation, 1st, . . .	PERCY VAN ORDEN.
Myron W. Smith Memorial Prize for Declamation, 2d, . . .	{ J. NEILSON CARPENDER, JR. CLIFFORD P. CASE.
Hart English Literature Prize, . . .	CLIFFORD P. CASE.
Spader Prize for Modern History, 1st, . . .	LEWIS G. LEARY.
Spader Prize for Modern History, 2d, . . .	LOUIS P. PEEKE.

## FRESHMAN PRIZES.

Tunis Quick Grammar and Spelling Prize, . . WILLIAM A. MESSLER.  
 Sloan Entrance Examination Prize, 1st, . . . GEORGE J. GLINZ.  
 Sloan Entrance Examination Prize, 2d, . . . FRANCIS K. W. DEURY.  
 Barbour Prize in Speaking, 1st, . . . . . JACOB WYCKOFF.  
 Barbour Prize in Speaking, 2d, . . . . . WALTER H. SEELY.

## 7. RUTGERS CORPS CADETS.

## COMMANDANT.

GEORGE B. DAVIS,  
 First Lieutenant, Fourth U. S. Infantry.

## FIELD.

HOWARD E. WHITE, Major.

## STAFF.

W. W. BURDEN, First Lieutenant and Adjutant.  
 C. A. POULSON, First Lieutenant and Quartermaster.  
 G. E. JACKSON, Sergeant-Major.  
 G. F. WITTIG, Quartermaster-Sergeant.

## COLOR GUARD.

R. B. PARROTT, Color-Sergeant.  
 Privates, E. B. FITHIAN, T. H. LETSON.

## COMPANY A.

Captain, . . . I. L. REED.  
 First Lieut., . . A. B. ROOME.  
 Second Lieut., . . W. K. CAVILEER.  
 First Sergeant, . . J. E. ASHMEAD.  
 Sergeants, . . { W. SUTHERLAND.  
                   { S. L. HARDING.  
 Corporals, { W. P. C. STRICKLAND, JR.  
               { L. U. STRASSBURGER.

## COMPANY B.

Captain, . . . J. G. BAIER.  
 First Lieut., . . F. C. MANLEY.  
 Second Lieut., . . G. VAN CLEVE.  
 First Sergeant, . . W. J. MORRISON, JR.  
 Sergeants, . . { R. B. PARROTT.  
                   { S. D. LUDLUM.  
                   { T. E. GRAVATT.  
 Corporals, . . { E. E. VAN CLEEF.  
                   { A. E. PREBLE.

## COMPANY C.

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 First Lieut., . . G. S. MOWER.  
 Second Lieut., . . L. INGLIS.  
 First Sergeant, . . J. S. VERGA.  
 Sergeants, . . { H. E. REID.  
                   { G. A. OSBORN.  
 Corporals, . . { W. A. MESSLER.  
                   { J. WYCKOFF.

## COMPANY D.

Captain, . . . R. M. PIERSON.  
 First Lieut., . . J. F. ZABRINKIE.  
 Second Lieut., . . H. E. VAN NESS.  
 First Sergeant, . . G. S. FERGUSON.  
 Sergeants, . . { R. V. CARPENTER.  
                   { H. HADDOW, JR.  
 Corporals, . . { C. V. SMITH.  
                   { R. S. PEARSE.

## DISTINGUISHED STUDENTS IN MILITARY DEPARTMENT.

In accordance with orders of the War Department, on the graduation of every class the names of such students as have shown special aptitude for military service will be reported to the Adjutant-General of the Army and to the Adjutant-General of New Jersey; and the names of the three most distinguished students in Military Science and Tactics will be inserted in the U. S. Army Register and published in general orders.

The names of the students of the Class of 1895 who were so reported to the Adjutant-General of the Army and the Adjutant-General of New Jersey, and whose names will appear in the Army Register for 1896, are :

GEORGE F. SCULL, JR., Cadet Major.

THOMAS F. RUSSUM, Cadet Captain.

ROBERT S. PARSONS, Cadet Captain.

## 8. THE ASSOCIATION OF THE ALUMNI OF RUTGERS COLLEGE.

## OFFICERS FOR THE YEAR 1895-'96.

President, . . .	HON. ANDREW KIRKPATRICK, '68.
Vice Presidents, . . .	{ WILLIAM S. BANTA, '44. REV. J. H. HOPKINS, '50. JAMES NEILSON, '66. FREDERICK FEELINGHUYSEN, '68.
Secretary, . . .	PROFESSOR A. A. TITSWORTH, '77.
Treasurer, . . .	THEODORE B. BOORAEM, '81.
Necrologist, . . .	IRVING S. UPSON, '81.
Chief Inspector of Election of Alumni Trustees, . . .	} H. A. NEILSON, '73.
Assistant Inspectors, . . .	{ A. V. N. BALDWIN, M.D., '79. REV. A. H. DEMAREST, '79.
Orator Primarius, . . .	REV. WILLIAM R. TAYLOR, '76.
Orator Secundus, . . .	REV. WILLIAM S. CRANMER, '82.

Standing Committee, .	{	H. R. BALDWIN, M.D., LL.D., '49, Chairman.
		PROFESSOR A. A. TITSWORTH, '77, Sec'y, <i>ex officio</i> .
		T. B. BOORAEM, '81, Treasurer, <i>ex officio</i> .
		REV. D. D. DEMAREST, D.D., LL.D., '87.
		REV. H. C. BERG, '66.
		REV. W. R. DURYEE, D.D., '56.
		J. N. CARPENDER, '66.
		J. B. KIRKPATRICK, '66.
		JAMES NEILSON, '66.
		D. D. WILLIAMSON, '70.
		H. A. NEILSON, '78.
		REV. P. T. POCKMAN, '75.
		J. S. VOORHEES, '76.
		PROFESSOR L. BEVIER, JR., '78.
		IRVING S. UPSON, '81.

9. RUTGERS COLLEGE ALUMNI ASSOCIATION OF THE CITY  
OF NEW YORK.

Executive Committee, .	{	HON. GARRET A. HOBART, '63, President.
		DAVID MURRAY, '76, Vice President.
		REV. HENRY E. COBB, '84, Sec'y and Treas.
		REV. JOACHIM ELMENDORF, D.D., '50.
		L. LAFLIN KELLOGG, '70.
		W. H. VAN STEENBERGH, '77.
		IRVING S. UPSON, '81.
		PHILIP M. BRETT, '92.

10. RUTGERS CLUB.

Dinner Committee, . .	{	REV. WILLIAM H. TEN EYCK, D.D., '45.
		REV. C. I. SHEPARD, D.D., '50.
		HON. H. W. BOOKSTAVEN, LL.D., '59.
		REV. CHARLES H. POOL, DD., '68.
		AUGUSTUS FLOYD, '65.
		JOHN N. CARPENDER, '66.
		CHARLES A. RUNK, '74.
		DAVID MURRAY, '76.
		REV. HENRY E. COBB, '84.
		LOUIS F. BISHOP, M.D., '85, Sec'y and Treas., 80 West Thirty-sixth street, New York.
		JAMES BISHOP, M.D., '91.
		PHILIP M. BRETT, '92.

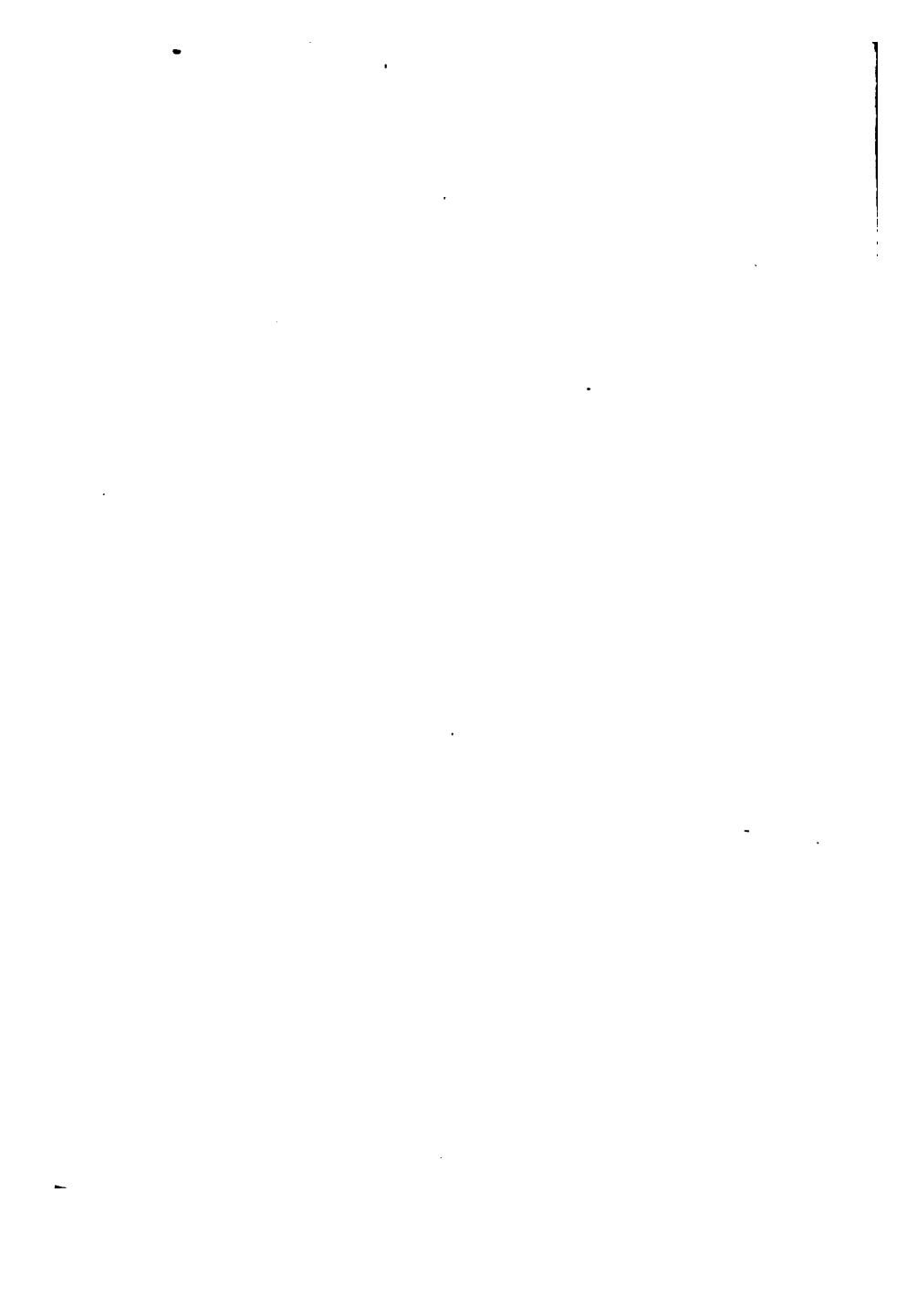


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CATALOGUE  
OF  
RUTGERS COLLEGE  
AT  
NEW BRUNSWICK, N. J.



1896-'97



Date

CATALOGUE  
OF THE  
OFFICERS AND STUDENTS  
OF  
RUTGERS COLLEGE  
AT  
NEW BRUNSWICK, N. J.

1896-'97

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CHARTERED AS QUEEN'S COLLEGE A. D. 1766

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PRINTED FOR THE COLLEGE

# CALENDAR.

## 1896.

SEPTEMBER 15, Tuesday, 10 A. M.: Examinations for admission.  
 SEPTEMBER 16, Wednesday, 8:40 A. M.: First Term begins. Recitations.  
 OCTOBER 2, 8, Friday, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 27, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOVEMBER 25-30, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving Recess.  
 DECEMBER 16-22, Wednesday-Tuesday: Examinations. First Term ends.  
 DEC. 22-JAN. 6, Tuesday-Wednesday, 8:40 A. M.: Christmas Vacation.

## 1897.

JANUARY 6, Wednesday, 8:40 A. M.: Second Term begins. Recitations.  
 JANUARY 14, Thursday: Stated Meeting of the Board of Trustees, 2 P. M.  
 JANUARY 28, Thursday: Day of Prayer for Colleges.  
 FEBRUARY 22, Monday: Washington's Birthday.  
 MARCH 2, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 MARCH 24, 30, Wednesday-Tuesday: Examinations. Second Term ends.  
 MAR. 30-APR. 7, Tuesday-Wednesday, 8:40 A. M.: Spring Vacation.  
 APRIL 7, Wednesday, 8:40 A. M.: Third Term begins. Recitations.  
 MAY 17-19, Monday-Wednesday: Senior Final Examinations.  
 JUNE 5, Saturday: Competitive Examinations in each County Court House of New Jersey for Free Scholarships in the State Agricultural College (Rutgers Scientific School), 9 A. M.  
 JUNE 7-11, Monday-Friday: Examinations of Three Lower Classes.  
 JUNE 11, Friday: Reading of Theses by Scientific Seniors, 2 P. M.  
 JUNE 11, 12, Friday, 10 A. M., and Saturday: Examinations for admission.  
 JUNE 13, Sunday: Baccalaureate Sermon, 7:30 P. M.  
 JUNE 14, Monday:  
 Class-Day Exercises, 8 P. M.  
 Junior Exhibition, 8 P. M.  
 JUNE 15, Tuesday:  
 Stated Meeting of the Board of Trustees, 10:30 A. M.  
 Annual Meeting of the Alumni, 10:30 A. M.  
 Address before the Alumni, 12:30 P. M.  
 Alumni Dinner, 1:30 P. M.  
 181ST ANNUAL COMMENCEMENT, 8 P. M.  
 JUNE 15-SEPT. 22, Tuesday-Wednesday: Long Vacation.  
 SEPTEMBER 21, Tuesday:  
 Examinations for admission, 10 A. M.  
 Examinations for removal of June Conditions, 10 A. M.  
 SEPTEMBER 22, Wednesday, 8:40 A. M.: First Term begins. Recitations.  
 OCTOBER 1, 2, Friday, Saturday: Sloan Entrance Prize Examinations.  
 OCTOBER 26, Tuesday: Stated Meeting of the Board of Trustees, 2 P. M.  
 NOVEMBER 24-29, Wednesday, 11 A. M.-Monday, 8:40 A. M.: Thanksgiving Recess.  
 DECEMBER 15-21, Wednesday-Tuesday: Examinations. First Term ends.  
 DEC. 21-JAN. 5, Tuesday-Wednesday, 8:40 A. M.: Christmas Vacation.

## 1898.

JANUARY 5, Wednesday, 8:40 A. M.: Second Term begins. Recitations.

## TRUSTEES.

1896-'97.

## EX OFFICIO.

HIS EXCELLENCY JOHN W. GRIGGS, LL.D.,	PATERSON.
<i>Governor of the State of New Jersey.</i>	
HON. MERCER BEASLEY, LL.D.,	TRENTON.
<i>Chief Justice of the State of New Jersey.</i>	
HON. JOHN P. STOCKTON, LL.D.,	TRENTON.
<i>Attorney-General of the State of New Jersey.</i>	

## BY ELECTION.

<i>Names.</i>	<i>Addresses.</i>	<i>Date of Election.</i>
AUSTIN SCOTT, PH.D., LL.D., <i>President of the College.</i>	New Brunswick,	Nov. 25, 1890.
HON. JOHN HOPPER,	Paterson,	July 22, 1851.
MAURICE E. VIELE, Esq.,	Albany, N. Y.,	July 27, 1853.
REV. DAVID D. DEMAREST, D.D., LL.D.,	New Brunswick,	April 18, 1858.
HENRY L. JANEWAY, Esq.,	New Brunswick,	April 8, 1862.
*REV. TALBOT W. CHAMBERS, D.D., LL.D.,	New York City,	June 17, 1868.
REV. JOACHIM ELMENDORF, D.D.,	New York City, 85 Mt. Morris Ave.	April 14, 1869.
REV. PAUL D. VAN CLEEF, D.D.,	Jersey City, 288 Barrow St.	April 14, 1869.
SAMUEL SLOAN, Esq.,	New York City, 26 Exchange Place.	June 20, 1871.
HON. GEORGE C. LUDLOW, LL.D.,	New Brunswick,	June 17, 1873.
HON. WILLIAM A. NEWELL, M.D., LL.D.,	Olympia, Wash.,	June 17, 1873.
REV. JOHN GASTON, D.D.,	Passaic,	June 20, 1876.
HON. HENRY W. BOOKSTAYER, LL.D.,	New York City, 14 East 67th St.	June 20, 1876.
ROBERT F. BALLANTINE, Esq.,	Newark,	June 20, 1876.
WILLIAM CLARK, Esq.,	Newark,	Oct. 29, 1878.
HON. GEORGE H. SHEARPE,	Kingston, N. Y.,	March 4, 1879.
DAVID BINGHAM, Esq.,	East Orange,	March 7, 1882.
HENRY R. BALDWIN, M.D., LL.D.,	New Brunswick,	June 17, 1884.
FREDERICK FREELINGHUYSEN, Esq.,	Newark,	June 16, 1885.

\* Died February 8d, 1896.

<i>Names.</i>	<i>Addresses.</i>	<i>Date of Election.</i>
*ERNEST J. MILLER, Esq.,	Albany, N. Y.,	June 16, 1886
HON. JONATHAN DIXON, LL.D.,	Jersey City, 479 Jersey Ave.	June 22, 1886.
JAMES NEILSON, Esq.,	New Brunswick,	June 22, 1886.
REV. RODERICK TERRY, D.D.,	New York City, 169 Madison Ave.	June 22, 1886.
TUNIS G. BERGEN, Ph.D.,	Brooklyn, N. Y., 74 Willow St.	Oct. 26, 1887.
REV. EDWARD B. COE, D.D., LL.D.,	New York City, 42 West 62d St.	Oct. 26, 1887.
REV. JOHN B. DEURY, D.D.,	New Brunswick,	Oct. 26, 1887.
REV. JAMES LE FEVRE, D.D.,	Middlebush,	June 16, 1888.
FREDERICK J. COLLIER, Esq.,	Hudson, N. Y.,	June 16, 1891.
†ALEXANDER T. VAN NEST, Esq.,	New York City,	June 16, 1891.
PAUL COOK, Esq.,	Troy, N. Y.,	June 16, 1891.
DAVID MURRAY, Ph D., LL D.,	New Brunswick,	March 1, 1892.
HON. GARRET D. W. VROOM,	Trenton,	June 21, 1892.
J. BAYARD KIRKPATRICK, Esq.,	New Brunswick,	June 21, 1892.
ROBERT SCHELL, Esq.,	New York City, 38 West 56th St.	March 6, 1894.
GEORGE L. DANFORTH, Esq.,	Middleburgh, N.Y.,	June 19, 1894.
REV. HENRY D'B. MULFORD,	Syracuse, N. Y.,	March 5, 1895.
WILLIAM H. LEUPP, Esq.,	New Brunswick,	June 18, 1896.
HON. GARRET A. HOBART, LL.D.,	Paterson,	June 16, 1896.

---

REV. DAVID D. DEMAREST, D.D., LL.D., . . . New Brunswick.

*Secretary of the Board.*

FREDERICK FRELINGHUYSEN, Esq., . . . Newark.

*Treasurer of the Board.*

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STATED MEETINGS OF THE BOARD.

Last Tuesday in October, at 2 o'clock P. M.

Second Thursday in January, at 2 o'clock P. M.

First Tuesday in March, at 2 o'clock P. M.

Commencement Day, at 10:30 o'clock A. M.

---

\* Died November 2d, 1896.

† Died August 10th, 1896.

FACULTY.

---

AUSTIN SCOTT, PH.D., LL.D.,  
PRESIDENT,

VOORHEES *Professor of History and Political Science.*  
24 Livingston Avenue.

REV. JACOB COOPER, D.D., D.C.L., LL.D.,  
-COLLEGIATE CHURCH *Professor of Logic and Mental Philosophy.*  
108 George Street.

REV. CARL MEYER, D.D.,  
*Professor of Modern Languages and Literatures.*  
246 Maston Avenue.

FRANCIS CUYLER VAN DYCK, PH.D.,  
*Professor of Physics and Experimental Mechanics.*  
84 College Avenue.

EDWARD ALBERT BOWSER, C.E., LL.D.,  
*Professor of Mathematics and Engineering.*  
Queen's College.

REV. CHARLES EDWARD HART, D.D.,  
*Professor of the English Language and Literature.*  
38 Livingston Avenue.

LOUIS BEVIER, JR., PH.D.,  
*Professor of the Greek Language and Literature.*  
*Secretary of the Extension Department.*  
Bishop Place.

EDGAR SOLOMON SHUMWAY, PH.D.,  
*Professor of the Latin Language and Literature.*  
211 Livingston Avenue.

ALFRED ALEXANDER TITSWORTH, M.S., C.E.,  
*Professor of Graphics and Mathematics.*  
590 George Street.

## RUTGERS COLLEGE.

JULIUS NELSON, PH.D.,

*Professor of Biology.*

Adelaide Avenue, Highland Park.

BYRON DAVID HALSTED, Sc.D.,

*Professor of Botany and Horticulture.*

121 Livingston Avenue.

JOHN BERNHARD SMITH, Sc.D.,

*Professor of Entomology.*

45 Mine Street.

EDWARD BURNETT VOORHEES, A.M.,

*Professor of Agriculture.*

College Farm.

REV. WILLIAM RANKIN DURYEE, D.D.,

THEODORE FRELINGHUYSEN *Professor of Ethics, Evidences of Christianity  
and the English Bible.*

17 Union Street.

ALBERT HUNTINGTON CHESTER, E.M., PH.D., Sc.D.,

*Professor of Chemistry and Mineralogy.**Curator of the Museum.*

35 College Avenue.

JOHN CHARLES VAN DYKE, L.H.D.,

*Professor of the History of Art.*

Seminary Campus.

ROBERT WOODWORTH PRENTISS, M.S.,

*Professor of Mathematics and Astronomy.*

83 Easton Avenue.

ELIOT ROBERTSON PAYSON, PH.D.,

*Professor of the History and Art of Teaching.*

Hamilton Street.

EDWARD LUTHER STEVENSON, PH.D.,

*Professor of History.*

Hamilton Avenue.



\*GEORGE BURWELL DAVIS, 1ST LIEUTENANT, 4TH U. S. INFANTRY,  
*Professor of Military Science and Tactics.*  
Union Street.

† WILLIAM CATHCART BUTTLER, CAPTAIN, 3D U. S. INFANTRY,  
*Professor of Military Science and Tactics.*  
38 College Avenue.

IRVING STRONG UPSON, A.M.,  
*Librarian and Registrar.*  
*Secretary of the Faculty.*  
38 College Avenue.

CLARENCE LIVINGSTON SPEYERS, PH.B.,  
*Associate Professor of Chemistry.*  
64 College Avenue.

WILLIAM SHIELDS MYERS, M.S., F.C.S.,  
*Associate Professor of Chemistry.*  
98 Easton Avenue.

EDWARD LIVINGSTON BARBOUR,  
*Instructor in Rhetoric and Elocution.*  
210 Townsend Street.

CHARLES EVERETT ADAMS, A.M., M.D.,  
*Instructor in Physical Training.*  
*Director of the Gymnasium.*  
Gymnasium.

EZRA FREDERICK SCATTERGOOD, B.S.,  
*Instructor in Mathematics, Electricity and Physics.*  
60 College Avenue.

EDWIN BELL DAVIS, B.L.,  
*Instructor in Modern Languages.*  
218 Baldwin Street.

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The names of the Faculty, after that of the President, are arranged in groups. The Professors, according to seniority of appointment; the Librarian and Registrar; the Associate Professors and Instructors, in the order of their respective appointments.

\* Until October 16th. † After October 16th.

## CATALOGUE OF STUDENTS

FOR THE YEAR BEGINNING SEPTEMBER 16, 1896.

## GRADUATE STUDENTS.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
GABRIEL LUDLOW, B.S., Rutgers Scientific School. <i>Chemistry.</i>	New Brunswick,	95 Bayard St.
EDWIN CORWIN MCKEAG, A.B., Rutgers College. <i>Mathematics, Physics, Astronomy.</i>	New Brunswick,	238 Somerset St.
WILLIAM VAN BERGEN VAN DYCK, B.S., Rutgers Scientific School. <i>Chemistry.</i>	New Brunswick,	84 College Ave.

## SENIOR CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
CLIFFORD PHILIP CASE,	New Brunswick,	Hertzog Hall.
WILLIAM GURLEY COOK,	Troy, N. Y.,	Bleecker Place.
FRANK HAMILTON DOBSON,	Bayonne,	Chi Phi Lodge.
RICHARD LOUNSBERY ELTINGE,	Kingston, N. Y.,	Delta Upsilon House.
ALFRED ERICKSON,	New Brunswick,	Highland Park.
ANDREW WYCKOFF HAGEMAN,	Belleville,	Delta Upsilon House.
CHARLES MEEKS MASON,	Newark,	Newark.
ANDREW JOHN MEYER,	Albany, N. Y.,	Chi Phi House.
LOUIS PROVOST PREEK,	East Millstone,	Delta Upsilon House.
JOSEPH SCUDDER,	New Brunswick,	Delta Phi House.
FRANCIS AUGUSTUS SEIBERT,	Oradell,	51 Hertzog Hall.
CHARLES WILLARD VOORHEES,	Middlebush,	Zeta Phi House.
ANDREW JUDSON WALTER,	Tradesville, Pa.,	14 Hertzog Hall.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
JAMES EDWARD ASHMEAD,	Pleasantville,	162 New St.
FREDERICK HARVEY BLODGETT,	Washington, D. C.,	96 Albany St.
GEORGE WASHINGTON BROWN,	Keyport,	Delta Phi House.
JOHN NEILSON CARPENTER, JR.,	New Brunswick,	George St.
RAYMOND VAN ARSDALE CARPENTER,	Plainfield,	Delta Upsilon House.
MORRISON CROSBY COLYER,	Newark,	Chi Psi Lodge.
RALPH BREWSTER CORBIN,	Metuchen,	Delta Phi House.
GERARD JOHN DIEHL,	Passaic,	96 Paterson St.
GEORGE STANLEY FERGUSON,	Ocean Grove,	186 Winants Hall.
THOMAS EZEKIEL GRAVATT,	Clarksburgh,	College Farm.
HUGH HADDOW, JR.,	Newark,	Chi Phi House.
SAMUEL LAWRENCE HARDING,	Bridgeton,	Chi Phi House.
CHARLES LIPPINCOTT HOOPES,	Haddonfield,	85 Easton Ave.
LEWIS GASTON LEARY,	Elizabeth,	Elizabeth.
SEYMOUR DE WITT LUDLUM,	Paterson,	358 George St.
HENRY MARELLI,	Paterson,	109 Winants Hall.
JOHN MAHLON MILLS,	Morristown,	62 Winants Hall.
WILLIAM JAMES MORRISON, JR.,	Ridgefield Park,	Delta Phi House.
JAMES BRYAN NOE,	Elizabeth,	Elizabeth.
GEORGE AUGUSTUS OSBORN,	Ocean Grove,	Beta Theta Pi House.
RALPH BREWSTER PARBOTT,	Schoharie, N. Y.,	Delta Phi House.
HOWARD EGBERT REID,	Smithburgh,	College Farm.
ALBERT ROSE RIGGS,	Milton,	Chi Phi House.
FREDERIC FREDERIC ROEBER,	Newark,	Newark.
PAUL SCHUREMAN,	Toms River,	85 Albany St.
WILLIAM UNGER SMALL,	Newark,	Newark.
EDGAR DE MOTT STREYKER,	Raritan,	102 Winants Hall.
*WILLIAM SUTHERLAND,	Jersey City,	Delta Phi House.
HENRY LUDWIG ULRICH,	Newark,	Newark.
JOHN STANLEY VERGA,	Camden,	61 Winants Hall.
JOHN ALFRED WILSON,	Dunellen,	114 Bayard St.

\* Died December 8th, 1896.

## JUNIOR CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
CHARLES FREDERICK BENJAMIN, JR.,	Fishkill, N. Y.,	43 Hertsog Hall.
JOHN BLACK,	Brookview, N. Y.,	12 Hertsog Hall.
EDWARD DAWSON,	Walden, N. Y.,	16 Hertsog Hall.
FLOYD DECKER,	Newton,	45 Hertsog Hall.
HENRY RICHARD DE WITT,	Glasco, N. Y.,	Delta Upsilon House.
FRANCIS KE. SE WYNKOOP DEURY,	New Brunswick,	88 Livingston Ave.
GEORGE HARRINGTON,	New York City,	22 Hertsog Hall.
JOHN ALBERT LIGGETT, JR.,	Rahway,	Rahway.
EDWARD GODFREY WALTER MEURY,	Brooklyn, N. Y.,	47 Hertsog Hall.
KING STICKLE ORAM,	Rockaway,	Chi Phi House.
GEORGE TODD VAUER,	Rahway,	Rahway.
ROBERT THOMAS WILSON,	Brantford, Canada,	Chi Psi Lodge.

## Scientific Section.

BENJAMIN STEELMAN CHAMPION,	Ocean City,	148 Somerset St.
JAMES COLLINS,	Freehold,	South River.
JOHN FINLEY DRAKE,	Mendham,	Delta Upsilon House.
RAYMOND GULICK,	Middletown,	College Farm.
JOHN BRANDON GUTHRIE,	Englewood,	Zeta Psi House.
GEORGE HUTCHINSON,	New Brunswick,	Three Mile Run.
WILLIAM EDWARD KELLY, JR.,	Jersey City,	Zeta Psi House.
JACOB KOTINSKY,	Woodbine,	15 Neilson St.
JACOB GOODALE LIPMAN,	Woodbine,	College Farm.
WILLIAM ALLEN MESLER,	Allentown,	114 Bayard St.
RICHARD SEBASTIAN PEARSE,	Brooklyn, N. Y.,	18 Hertsog Hall.
CORYDON MOTT RYNO,	Benton Harbor, Mich.,	52 Oliver St.
CHARLES VERNON SMITH,	South Seaville,	Delta Upsilon House.
LYMAN MILLER SMITH,	Dover,	Chi Psi Lodge.
ULRICH LOUIS STRASSBURGER,	New Brunswick,	12 Bayard St.
WILLIAM PITMAN CORBETT STRICK- LAND, JR.,	New Brunswick,	263 Suydam St.
WAYNE HUBERT THOMPSON,	New Brunswick,	180 Winants Hall.
JOHN JERVIS VAIL,	Rahway,	Rahway.
ELLIOTT EARLE VAN CLEEF,	New Brunswick,	94 Albany St.
HAVELOCK WALKER,	West New Brighton,	Zeta Psi House.
EDMUND OLIVER WOOD,	Bordentown,	Bordentown.
JACOB WYCKOFF,	New Brunswick,	205 Redmond St.

## SOPHOMORE CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
ROBERT WILLIAM COURTNEY,	New York City,	Beta Theta Pi House.
SAMUEL MILLS CUDDEBACK,	Port Jervis, N. Y.,	Delta Phi House.
GEORGE W. ECKER,	Albany, N. Y.,	10 Hertzog Hall.
WELLINGTON FOCKMAN FRANCISCO,	Caldwell,	Beta Theta Pi House.
WILLIAM REESE HART,	Neshanic,	20 Hertzog Hall.
JAMES MACDONALD MARTIN,	East Orange,	147 College Ave.
WILLIAM FRANKLIN PLUMLEY,	Dayton,	Chi Psi Lodge.
AUGUSTUS HUNT SHEARER,	Philadelphia, Penn.,	35 College Ave.
ISAAC EDWARD TITSWORTH,	Dunellen,	590 George St.
DAVID CRAWFORD WEIDNER,	West Shokan, N. Y.,	141 Welton St.

## Scientific Section.

HENRY WESTERVELT BANTA,	Hackensack,	Beta Theta Pi House.
HAMLET PAUL COLLINS,	New Brunswick,	282 Redmond St.
WILLIAM ABNER CORIELL,	New Brunswick,	300 George St.
CARL HENRY HERMAN FISCHER,	Newark,	Newark.
THEODORE CHRISTIAN FISCHER,	Elizabeth,	Elizabeth.
CLARENCE GARRETSON,	Somerville,	120 Bayard St.
THOMAS AQUINAS GERRETY,	New Brunswick,	41 Stone St.
WILLIAM ALOYSIUS GROWNEY,	Perth Amboy,	Perth Amboy.
WILLIAM LAWRENCE ROSS HAINES,	Newark,	Delta Upsilon House.
WILLIAM EDWARD HELMSTAEDTER,	Newark,	Newark.
HARRY LOUIS MARKER,	Newark,	Newark.
JOHN WYCKOFF METTLER,	East Millstone,	Delta Phi House.
RICHARD MORRIS,	Stelton,	Stelton.
DUDLEY DIGGES FLEMING PARKER,	Jersey City,	Delta Phi House.
LOUIS JACOB QUAD,	New Brunswick,	56 Dennis St.
BENJAMIN ROSENBLUM,	Newark,	14 Hiram St.
LAURANCE PHILLIPS RUNYON,	New Brunswick,	14 Union St.
EDGAR HARVEY SABLES,	Stelton,	Stelton.
CLAUDE EDWARD SCATTERGOOD,	Newark,	Newark.
FREDERICK DE WITT SEARING,	Newark,	Newark.
JOHN WALLACE THOMPSON,	Morristown,	Chi Phi House.
HAROLD NEWELL VAN BERGEN,	Elizabeth,	Elizabeth.
FREDERICK GEORGE VON GEHREN,	Newark,	35 Easton Ave.
HENRY JANEWAY WESTON,	New Brunswick,	17 Livingston Ave.
CHARLES EDWARD WHITLOCK,	New Brunswick,	54 Baldwin St.
FREDERICK HINSDALE WINN,	New Brunswick,	102 Winants Hall.

## FRESHMAN CLASS.

## Classical Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
RALPH WILCOX BOOTH, JR.,	New Brunswick,	123 Livingston Ave.
ARTHUR PERLEE BROKAW,	Freehold,	205 Redmond St.
CLARENCE EDWARDS CASE,	New Brunswick,	Hertzog Hall.
ROBERT ANDERSON COOKE,	New Brunswick,	7 Livingston Ave.
CHARLES TIEBOUT COWENHOVEN, JR.,	New Brunswick,	139 College Ave.
FRANK ECKERSON,	West Nyack, N. Y.,	24 Hertzog Hall.
AARON BOYLAN FITZ-GERALD,	Newark,	Newark.
PAUL FRED GIRTANNER,	Newark,	Newark.
STETSON PRATT HARDENBERGH,	New Brunswick,	88 Bayard St.
CHARLES HYNEMAN HOAGLAND,	Asbury,	Beta Theta Pi House.
WILLIAM EDWIN MCMAHON,	Rahway,	Rahway.
ROBERT WALTER PETTIT,	New Brunswick,	144 Livingston Ave.
MARINUS SEYMOUR PURDY,	Astoria, N. Y.,	38 Hertzog Hall.
WILLIAM SIMPSON,	Manayunk, Penn.,	41 Hertzog Hall.
GOYN TALMAGE,	New York City,	87 Winants Hall.
EDWARD HENRY WILLIAMS,	Warsaw, N. Y.,	114 Bayard St.
JOHN WIRTH,	Albany, N. Y.,	Chi Phi House.

## Scientific Section.

<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
PETER MYER BRINK,	Kingston, N. Y.,	105 Winants Hall.
MAURICE VIELE CAMPBELL,	New Brunswick,	146 Livingston Ave.
HENRY H. CONOVER,	Dayton,	Dayton.
HARRY FRANCISCO COOPER,	Newark,	Newark.
HERBERT COTTRELL,	Matawan,	11 Winants Hall.
BLANCHARD COLLINS EDGAR,	Rahway,	Rahway.
HENRY EGGERDING,	Plainfield,	99 Winants Hall.
WILLIAM HENRY GREENE,	Newark,	Carroll Place.
JOSEPH JOHNSTON HART,	Newark,	Newark.
EUGENE ELLIOTT HIGGINS,	Perth Amboy,	Zeta Psi House.
JOHN BAYARD KIRKPATRICK, JR.,	New Brunswick,	94 College Ave.
MICHAEL LIPMAN,	Bound Brook,	Bound Brook.
WILLIAM MORRIS MCCLAIN,	May's Landing,	148 Somerset St.
ELLIS BOWNE McLAUREY,	New Brunswick,	25 Remsen Ave.
RALPH BRIGHTON PARSONS,	Paterson,	Delta Upsilon House.
WILLIAM HENRY PEARCE,	New Brunswick,	304 Redmond St.
ERNEST HAROLD RAPALJE,	Amoy, China,	Chi Psi Lodge.
HERBERT DE WITT RAPALJE,	Amoy, China,	Chi Psi Lodge.
WILLIAM STEWART CROWLEY RORAY,	Palmyra,	135 Winants Hall.
CHILTON ROBBINS ROSELL,	Freehold,	205 Redmond St.
RUSSELL BRUCE SAMMIS,	Garfield,	Garfield.
JOHN LEO SAUER.	Elizabeth,	Elizabeth.
EDWIN KIBBEE SEXTON,	Brooklyn, N. Y.,	17 Hardenbergh St.
JOHN FRANCIS TINSLEY,	Elizabeth,	Elizabeth.
CORNELIUS VAN LEUVEN,	Kingston, N. Y.,	105 Winants Hall.
WINANT VAN WINKLE,	Rutherford,	Beta Theta Pi House.
HERBERT REYNOLDS VOORHEES,	Manasquan,	South River.
GRAHAM CROWELL WOODRUFF,	Rahway,	Rahway.

## SPECIAL STUDENTS.

NOT CANDIDATES FOR A DEGREE.

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<i>Names.</i>	<i>Residences.</i>	<i>Rooms.</i>
WILLARD PARKER CLARK, <i>Sciences.</i>	New Brunswick,	89 Bayard St.
MILTON RANDOLPH EASTLACK, <i>English.</i>	New Brunswick,	Livingston Park.
WILSON WARREN FOWLER, <i>Sciences.</i>	New Brunswick,	17 Guilden St.
GEORGE EDDY HEATH, <i>Sciences.</i>	New Brunswick.	99 Easton Ave.
VINCENT MOORE IRICK, <i>Sciences.</i>	Vincentown,	Chi Phi House.
PHIL. BLISS LYON, <i>Sciences.</i>	St. Joseph, Mo.,	64 College Ave.
RICHARD UDALL STRONG, <i>Classics.</i>	New Brunswick,	Highland Park.

## SUMMARY.

	Classical.	Scientific.	Total.
Graduate Students.	1	2	3
Seniors .....	13	30	43
Juniors .....	12	22	34
Sophomores .....	10	26	36
Freshmen .....	17	28	45
Special Students .....	2	5	7
Totals .....	55	113	168



## CLASSICAL SCHOOL.

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**I. ADMISSION.**

Every applicant for admission must be at least sixteen years of age, and must submit to the President proper testimonials of a good moral character.

**EXAMINATIONS AT THE COLLEGE.**—Examinations for admission will be held on the Friday and Saturday preceding Commencement week, June 11th and 12th, 1897, beginning at 10 o'clock A. M. on Friday, in the Registrar's office. Applicants may also be examined on Tuesday, September 21st, at the same hour and place. Students are advised to be present for examination in June.

Students who present themselves should be prepared, by careful study and by reviews of their work, to pass successfully a thorough examination on the subjects which are required.

Only such students are admitted with conditions as are, in the opinion of the examiners, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class.

Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that all entrance conditions will be made up before the Thanksgiving recess.

**CERTIFICATES.**—From certain preparatory schools of approved standing students are admitted to the Freshman Class upon the full certificate of the Principal.

Upon the request of the Principal or Board of Education, the Faculty will appoint a committee to visit any school and to report upon its condition.

The schools which shall be approved by the Faculty upon the report of this committee shall be entitled, for a period of three years, to the privilege of admission upon full certificate for their students, to the School for which they were prepared.

Blank forms of certificate for admission will be furnished to the Principal of an approved school upon application to the Registrar.

The certificate, when properly filled out, should be forwarded to the Registrar before the day fixed for the examination for admission in June of each year.

**ADVANCED STANDING.**—Students may enter advanced classes either at the beginning of the College year or at other times, if they sustain a satisfactory examination both on the preliminary studies and on those already passed over by the class which they propose to enter. Full equivalents will be accepted.

**SPECIAL STUDENTS.**—In exceptional cases students properly prepared for admission to the Freshman Class may, by special vote of the Faculty, be permitted to pursue select branches of study. Such students are required to take examinations and all work in Composition and Elocution with the class with which they have studied.

SLOAN PRIZES FOR THE BEST ENTRANCE EXAMINATIONS,  
CLASSICAL SCHOOL.

A FIRST PRIZE OF ONE HUNDRED DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills; and a SECOND PRIZE OF FIFTY DOLLARS in cash and a SCHOLARSHIP YIELDING \$300, to apply on term bills, established in 1883, by Hon. Samuel Sloan, of New York, a member of the Board of Trustees, will be awarded to the students who shall be adjudged by the examiners to have passed the best examination among the applicants for admission to the Freshman Class, in 1897. The cash prizes will be awarded, one-half at matriculation and one-half at the end of the second term of the Freshman year. The scholarship funds will be applied to cancel term bills for tuition during the course, and will be forfeited if the student's general average on the work of the year falls below 80 on a scale of 100.

Free scholarships may be given to young men of approved character and ability, whose family circumstances are such as to make assistance necessary. No deserving student who has shown perseverance and capacity is allowed to give up his course for lack of this assistance.

### REQUIREMENTS FOR ADMISSION.

The following, or a full equivalent, are the requirements for admission to the Freshman Class in the Classical School:

#### I. LATIN.

GRAMMAR, Allen-Greenough-Kittredge. Andrews-Stoddard-Preble, Bennett, Gildersleeve-Lodge, or Harkness The Roman system of pronunciation. Correctness in quantities is essential.

COMPOSITION, Jones, or forty-four lessons of Arnold-Mulholland. The candidate should have had constant exercise in writing Latin prose. Frequent oral exercises in rendering into Latin are earnestly recommended.

CÆSAR, four books of the *Gallie War*, or an equivalent amount of Cæsar's *Civil War*, or of Cornelius Nepos.

CICERO, six *Orations* (including the *Catilinarian*), and Sallust's *Catiline*, or if Sallust be omitted, nine *Orations*.

VERGIL, six books of the *Æneid*, with scansion, or five books of the *Æneid* with the *Eclogues*.

EQUIVALENTS may be substituted freely.

When the student elects to take the College examinations (instead of offering a preparatory school certificate), readiness and accuracy in "sight" translation, "sight" composition and "anticipatory" parsing will be allowed credits to offset quantitative deficiency.

HISTORY AND GEOGRAPHY; knowledge of the main facts of the Regal and Republican periods (Allen's *Short History of the Roman People* is approved); ability to map Italy, Gaul and Spain.

#### 2. GREEK.

GREEK GRAMMAR entire; Goodwin's, or Hadley and Allen's.

XENOPHON'S ANABASIS, four books.

HOMER'S ILIAD, three books (omitting the catalogue of the ships), or Homer's Odyssey, three books. Particular care should be given to scansion.

SIGHT READING. Students will be tested in reading easy Greek prose not included in the above.

PROSE COMPOSITION, Jones', or Collar and Daniell's, or Woodruff's.

GREEK HISTORY and Geography, Myers' History of Greece, or an equivalent, and a sufficient knowledge of Ancient Geography to enable the student to locate correctly the more important cities of Greece and the Asiatic coast, and to draw a general outline of the coast, placing the chief islands of the Ægean Sea.

The above statements indicate the amount of work presupposed by the entrance examinations, but results are more important than the pages covered, and a free substitution of equivalents is allowed.

In preparing for the Greek course too much prominence cannot be given to a careful drill in composition. In no other way can the Grammar be so easily mastered, particularly the laws of accent.

In pronunciation the accent must be followed in prose, while preserving the correct quantities; but in poetry regard will be had only to quantity.

### 3. MATHEMATICS.

ARITHMETIC complete, including the Metric System.

Fundamental operations; Common and Decimal Fractions; Percentage; Proportion; Square and Cube Root.

A practical knowledge of the Metric System of Weights and Measures is indispensable since it is used in the class-room.

ALGEBRA, through Quadratic Equations, including Radicals; or the first fifteen chapters of Bowser's College Algebra, or an equivalent.

Attention is especially called to the essential importance of a thorough preparation in the elements of Algebra, on which subsequent success in Mathematics depends. The students should be thoroughly drilled in the fundamental operations of addition, subtraction, multiplication and division, in the use of negative and fractional exponents, in factoring and in involution and in evolution. He should be able to solve readily simple and quadratic equations. It is earnestly recommended that the student be required to solve numerous and varied examples, and to explain them verbally, with clearness, giving the reasons for the successive steps. It is desirable also to cultivate habits of neatness and order in the presentation of work on the blackboard or paper.

PLANE GEOMETRY complete, Bowser's, or an equivalent, including Exercises. Careful attention should be given to the Exercises in Geometry, as they greatly aid in acquiring readiness in geometrical reasoning.

### 4. THE ENGLISH BRANCHES.

ENGLISH GRAMMAR.

SPELLING.

A SHORT ENGLISH ESSAY is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1897, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Shakespeare's *As You Like It*; Defoe's *History of the Plague in London*; Irving's *Tales of a Traveler*; Hawthorne's *Twice Told Tales*; Longfellow's *Evangeline*; George Eliot's *Silas Marner*.

The following books are set apart for examination upon subject-matter, form and structure, 1897: Shakespeare's *The Merchant of Venice*; Burke's *Speech on Conciliation with America*; Scott's *Marmion*; Macaulay's *Life of Samuel Johnson*.

In 1898, the examination will be upon Milton's *Paradise Lost*, Books I. and II.; Pope's *Iliad*, Books I. and XXII.; *The Sir Roger de Coverley Papers* in the *Spectator*; Goldsmith's *Vicar of Wakefield*; Coleridge's *Ancient Mariner*; Southey's *Life of Nelson*; Carlyle's *Essay on Burns*; Lowell's *Vision of Sir Launfal*; Hawthorne's *House of the Seven Gables*.

The following books are set apart for examination upon subject-matter, form and structure, 1898: Shakespeare's *Macbeth*; Burke's *Speech on Conciliation with America*; De Quincey's *The Flight of a Tartar Tribe*; Tennyson's *The Princess*.

HISTORY OF THE UNITED STATES (Johnston's History of the United States).

Candidates for admission are examined in the History of the United States, with special reference to the colonization of the several States, the forms of government which existed previous to the War for Independence, the causes and principal events of that war, the period of the Confederation, the establishment of the Federal Constitution, with the general history subsequent to that event.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

#### 5. MODERN LANGUAGES.

GERMAN OR FRENCH.—Either German or French may be offered at the option of the applicant. In either case he must show a good knowledge of the elements of grammar, ability to pronounce correctly, and acquaintance with the commonest irregular verbs. Grammars recommended are Whitney's Brief German Grammar, Joynes-Meissner's German Grammar for Schools and Colleges, or Grandgent's Short French Grammar and Whitney's Brief French Grammar.

## 2. COURSES OF STUDY.

The complete College course occupies four years, each year consisting of three terms.

All the studies of the Freshman and Sophomore years, and certain subjects of the Junior and Senior years, are prescribed for all candidates for a degree. These prescribed studies are intended to furnish the basis of a liberal education, whatever career or profession may be chosen.

The other studies of the Junior and Senior years are arranged in elective courses in accordance with a recent careful revision of the curriculum. These elective courses are designed not only to carry further the general training of the student in the liberal arts, but to fit him for the special occupation or profession which he proposes to follow.

The student is required to make his choice at the end of the Sophomore year, and the elective courses then chosen are to be pursued in connection with the prescribed studies throughout the last two years.

The following is a scheme of the studies of the prescribed and elective courses. While it is subject to change in details, it exhibits the amount of work required of students during the four years and indicates to candidates for advanced standing the equivalents which will be accepted from them :

Exercises in English are required throughout the entire course, as follows : Essays, two each term ; Forensics, four times each term, Declamations and Extempore Speaking during the Freshman and Sophomore years and Orations and Extempore Speaking during the Junior and Senior years.

Exercises in Physical Training are required four times a week during the Freshman and Sophomore years.

## FRESHMAN CLASS.

## FIRST TERM, THIRTEEN WEEKS.

Hours a week.

1. LATIN.—Terence; Cicero; Oral and Written Composition.....	4
2. GREEK.—Homer's <i>Odyssey</i> ; Prose Composition.....	4
3. MATHEMATICS.—Bowser's <i>Algebra</i> .....	4
4. ENGLISH LITERATURE.—History of the English Language and Literature; Chaucer; Private Reading.....	3
5. CIVICS.....	1

## SECOND TERM, THIRTEEN WEEKS.

1. LATIN.—Cicero; Composition.....	5
2. GREEK.—Selections from Herodotus and Xenophon; Prose Composition.....	5
3. MATHEMATICS.—Bowser's <i>Algebra</i> , completed; Bowser's <i>Geometry</i> ....	3
4. ENGLISH.—Composition; Baldwin's <i>Prose Description</i> ; Brewster's <i>Prose Narration</i> .....	1
5. ZOOLOGY.—Orton's <i>Comparative Anatomy</i> ; Lectures.....	2

## THIRD TERM. TEN WEEKS.

1. LATIN.—Livy; Composition.....	4
2. GREEK.—Lysias; Prose Composition.....	4
3. MATHEMATICS.—Bowser's <i>Geometry</i> , completed.....	4
4. ENGLISH LITERATURE.—History of English Literature; Pancoast's <i>Representative English Literature</i> ; Composition; Baker's <i>Argumentation</i> .....	2
5. BOTANY.—Gray.....	2



## SOPHOMORE CLASS.

## FIRST TERM.

Hours a week.

1. LATIN.—Catullus; Tacitus, Agricola, Germania.....	3
2. GREEK.—Selections from Plato; Prose Composition .....	3
3. MATHEMATICS.—Bowser's Plane and Spherical Trigonometry.....	3
4. INORGANIC CHEMISTRY.—Lectures, with Experiments, Remsen.....	4
5. GERMAN.—Thomas' Practical German Grammar; Prose Selections.....	3

## SECOND TERM.

1. LATIN.—Tacitus, Annales or Historiae; Horace.....	3
2. GREEK.—Demosthenes on the Crown; Æschines against Ctesiphon; Prose Composition.....	3
3. MATHEMATICS.—Bowser's Analytic Geometry.....	3
4. HISTORY.—Myers' Mediæval and Modern History.....	4
5. GERMAN.—Modern Drama; sight reading.....	3

## THIRD TERM.

1. LATIN.—Horace; Pliny's Letters.....	3
2. GREEK.—Aristophanes' Birds or Clouds; Prose Composition.....	3
3. MATHEMATICS.—Bowser's Analytic Geometry.....	3
4. HISTORY.—Myers' Mediæval and Modern History.....	4
5. GERMAN.—Schiller; Prose Composition.....	3

# JUNIOR CLASS.

## PRESCRIBED STUDIES.

**FIRST TERM.**

Hours a week.

1. FRENCH.—Bevier's French Grammar; Prose Selections.....	3
2. MENTAL PHILOSOPHY.—Porter's Elements of Intellectual Science; Schwegler's History of Philosophy, Stirling's Edition; Essays on Metaphysical Subjects.....	5
3. PHYSICS.—Ganot; Lectures.....	2

**SECOND TERM.**

1. FRENCH.—Modern Drama; sight reading.....	3
2. LOGIC.—Fowler's Logic.....	2
3. PHYSICS.—Ganot; Lectures.....	2
4. ASTRONOMY.—Young's Elements.....	3

**THIRD TERM.**

1. FRENCH.—Molière or Racine; Prose Composition.....	3
2. PHYSICS.—Ganot; Lectures.....	2
3. HISTORY OF CIVILIZATION.....	5

# SENIOR CLASS.

## PRESCRIBED STUDIES.

**FIRST TERM.**

1. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4
2. GEOLOGY.—Dana.....	4

**SECOND TERM.**

1. CONSTITUTIONAL LAW.—Cooley; Lectures.....	4
2. ETHICS.—English Bible; Evidences of Christianity.....	3
3. FINE ARTS.—Lectures.....	1

**THIRD TERM.**

1. INTERNATIONAL LAW.—Lectures.....	4
2. PRACTICAL ETHICS.....	2
3. PEDAGOGY.—Lectures.....	2
4. FINE ARTS.—Lectures.....	1

## JUNIOR AND SENIOR CLASSES.

## ELECTIVE STUDIES.

At the end of the Sophomore year choice is made of two elective courses, which are then pursued throughout the Junior and Senior years, in addition to the prescribed schedule of studies. Changes are not allowed after the beginning of the Junior year. The following are the elective courses offered :

- |             |                 |                |
|-------------|-----------------|----------------|
| 1. Latin.   | 4. German.      | 7. Chemistry.  |
| 2. Greek.   | 5. Mathematics. | 8. History.    |
| 3. English. | 6. Biology.     | 9. Philosophy. |

Students choosing the English Course may pursue English during the Junior and Senior years, or English during the Junior year, with French during the Senior year.

Students choosing Mathematics may pursue Mathematics during the Junior and Senior years, or Mathematics during the Junior year, with Physics during the Senior year.

The Course in Biology includes Zoology, Botany and Entomology.

Students choosing Chemistry may take Chemistry during the Junior and Senior years, or Chemistry during the Junior year, with Mineralogy and Geology during the Senior year, or Chemistry during the Junior year, with Physics during the Senior year, provided that Mathematics has been pursued during the Junior year.

Students taking the Course in Philosophy may pursue Mental Philosophy throughout the Junior and Senior years, or Mental Philosophy throughout the Junior year, with Moral Philosophy throughout the Senior year.

The recitation schedule will be arranged so as to allow thirty-two combinations of these elective courses, that is, all possible combinations except :

- 1 with 4.    2 with 5.    3 with 6.    7 with 9.

## ELECTIVE COURSES.

## 1. COURSE IN LATIN.

## JUNIOR YEAR.

Hours a week.

FIRST TERM.—Early and Curial Latin; Inscriptions, Plautus.....	3
SECOND TERM.—Middle Period; Philosophy.....	3
THIRD TERM.—Late Period; Christian Latin.....	3

## SENIOR YEAR.

FIRST TERM.—Roman Law; Krüger-Mommsen-Studemund, <i>Collectio Librorum Iuris Antiquissimi</i> .....	4
SECOND TERM.—Roman Law; The Institutes of Justinian, edited as a Recension of the Institutes of Gaius by T. E. Holland.....	4
THIRD TERM.—Roman Law; The Digest; Introduction to Justinian's Digest, Roby; Selected Titles, Holland and Shadwell.....	4

## 2. COURSE IN GREEK.

## JUNIOR YEAR.

FIRST TERM.—Thucydides and Other Historians.....	3
SECOND TERM.—Attic Orators, Selected Orations.....	3
THIRD TERM.—Selections from the Lyric Poets.....	3

## SENIOR YEAR.

FIRST TERM.—Sophocles and Æschylus or Euripides.....	4
SECOND TERM.—Plato's Republic; Aristotle's Metaphysics.....	4
THIRD TERM.—Lucian.....	4

## 3. COURSE IN ENGLISH.

## JUNIOR YEAR.

FIRST TERM.—Poetics; Literary Criticism.....	3
SECOND TERM.—The Elizabethan Poets, including Milton.....	3
THIRD TERM.—The English Drama; Shakespeare's Predecessors and Contemporary Dramatists; special studies in Shakespeare.....	3

## SENIOR YEAR.

FIRST TERM.—a. English.—History of English Prose, Lectures; English Prose authors, Minto.....	4
b. French.—Duval's Histoire de la Littérature Française; Seventeenth Century Dramatists.....	4

Hours a week.

SECOND TERM.—a. English.—Eighteenth Century Poets, and Poets of the Romantic Revival.....	4
b. French.—Eighteenth and Nineteenth Century Novelists.....	4
THIRD TERM.—a. English.—Sweet's Anglo-Saxon Primer; Brigh's Anglo-Saxon Reader.....	4
b. French.—Eighteenth and Nineteenth Century Dramatists.....	4

4. COURSE IN GERMAN.

JUNIOR YEAR.

FIRST TERM.—Wilhelm Tell, or another play of Schiller; German Prose Composition and Conversational German throughout the Junior and Senior years.....	3
SECOND TERM.—Faust, Part I., or another play of Goethe.....	3
THIRD TERM.—Minna von Barnhelm, or another play of Lessing.....	3

SENIOR YEAR.

FIRST TERM.—German Literature. Scherer, with lectures. The classroom work will be conducted entirely in German during the Senior year.....	4
SECOND TERM.—Middle High German; Grammar; The Niebelungen Lied.....	4
THIRD TERM.—Sight Reading of the German Lyric Poetry, with German Essays in Literary criticism.....	4

5. COURSE IN MATHEMATICS.

JUNIOR YEAR.

FIRST TERM.—Analytic Geometry, completed; Differential Calculus, Bowser.....	3
SECOND TERM.—Differential and Integral Calculus, Bowser.....	3
THIRD TERM.—Higher Mathematics.....	3

SENIOR YEAR.

FIRST TERM.—a. Higher Mathematics.....	4
b. Practical Astronomy; Observatory Work.....	4
c. Physics; Mechanics; Light; Laboratory Practice.....	4
SECOND TERM.—a. Higher Mathematics.....	4
b. Practical Astronomy; Observatory Work.....	4
c. Physics; Heat; Electricity; Laboratory Practice.....	4
THIRD TERM.—a. Higher Mathematics.....	4
b. Practical Astronomy; Observatory Work.....	4
c. Physics: Electricity; Sound; Laboratory Practice....	4

## 6. COURSE IN BIOLOGY.

## JUNIOR YEAR.

Hours a week.

FIRST TERM.—General Biology.....	3
SECOND TERM.—Invertebrate Zoology; Vegetable Histology.....	3
THIRD TERM.—Botany and Entomology.....	3

## SENIOR YEAR.

FIRST TERM.—Systematic Entomology; Vertebrate Anatomy.....	4
SECOND TERM.—Vegetable Physiology; Mammalian Anatomy and Histology.....	4
THIRD TERM.—Botany and Entomology.....	4

(Laboratory Practice 4 hours a week each term additional.)

## 7. COURSE IN CHEMISTRY.

## JUNIOR YEAR.

FIRST TERM.—Experimental Chemistry; Blowpipe Analysis.....	3
SECOND TERM.—Qualitative Analysis.....	3
THIRD TERM.—Qualitative Analysis, completed; Quantitative Analysis, ..	3

## SENIOR YEAR.

FIRST TERM.—a. Chemistry.—Quantitative Analysis.....	4
b. Mineralogy and Geology.....	4
SECOND TERM.—a. Chemistry.—Quantitative Analysis, or Advanced Experimental Chemistry.....	4
b. Mineralogy and Geology.....	4
THIRD TERM.—a. Chemistry.—Quantitative Analysis, or Advanced Experimental Chemistry.....	4
b. Mineralogy and Geology.....	4

(Laboratory practice 4 hours a week each term additional.)

## 8. COURSE IN HISTORY.

## JUNIOR YEAR.

FIRST TERM.—The Period of the Renaissance.....	3
SECOND TERM.—The Period of the Reformation.....	3
THIRD TERM.—English Constitutional History.....	3

## SENIOR YEAR.

FIRST TERM.—Critical Study of American History, Reports upon current Historical and Economic Literature.....	4
SECOND TERM.—Critical Study of American History, continued; Comparative Study of Modern Constitutions; Reports upon current Historical and Economic Literature.....	4
THIRD TERM.—Comparative Study of Modern Constitutions; Reports upon current Historical and Economic Literature.....	4

## 9. COURSE IN PHILOSOPHY.

(A choice will be made from time to time on the following basis.)

## JUNIOR YEAR.

Hours a week.

<b>FIRST TERM.</b> —Schwegler's History of Philosophy, Stirling's Edition; Porter's Elements of Psychology, continued; Aristotle's Metaphysics.....	3
<b>SECOND TERM.</b> —Fowler's Logic—Deductive; Schwegler's History of Philosophy; Aristotle's Metaphysics; Paulsen's Introduction to Philosophy.....	3
<b>THIRD TERM.</b> —Davis' Theory of Thought; Schwegler's History of Philosophy; Hegel's Logic, Harris' translation; Aristotle's Metaphysics.....	3

## SENIOR YEAR.

<b>FIRST TERM.</b> — <i>a.</i> Mental Philosophy.—Mansel's Metaphysics; Ueberweg's History of Logic and Logical Doctrines; Parts of Plato's Republic and Parmenides; Leibnitz's New Essays, English translation.....	4
<i>b.</i> Moral Philosophy.—Butler's Analogy.....	4
<b>SECOND TERM.</b> — <i>a.</i> Mental Philosophy.—Mansel's Metaphysics; Ueberweg's History of Logic and Logical Doctrines; Aristotle's Analytics; Paulsen's Introduction to Philosophy.....	4
<i>b.</i> Moral Philosophy.—Calderwood's Hand-Book of Moral Philosophy.....	4
<b>THIRD TERM.</b> — <i>a.</i> Mental Philosophy.—Berkeley's Principles of Science; Jevons' Principles of Science; Aristotle's Topica.....	4
<i>b.</i> Moral Philosophy.—Calderwood's Hand-Book of Moral Philosophy.....	4

**DESCRIPTION OF THE COURSES OF STUDY.****LATIN LANGUAGE AND LITERATURE.**

**TWO YEARS PRESCRIBED:**—The language of the later Republic and early Empire is studied. Word-meaning is fixed by inspecting form, derivation, and by comparing with synonymes and opposites. Sentence-study is analytical, looking to value and disposition of phrases and clauses; and synthetic, with written and oral composition, systematic and based on text read. Catechetics are held in Latin, according to progress of the student, by induction and practice to seek ready accuracy in the Latin tongue. Attention is increasingly called to differences in diction and syntax of the authors: Terence, Cicero, Catullus, Livy, Horace, Tacitus, Pliny.

**JUNIOR AND SENIOR ELECTIVE:**—The aim is a more scientific knowledge of the language and a broader view of the literature. Out of the wealth of Latin literature it is purposed to select text which shall be especially helpful to those desiring a deeper insight into the life and thought of Rome, and those intending to fit themselves for the law or the ministry. Junior year the field is changed each term. The student's increase in power of continuous concentration on work of a more specializing nature is met by devoting the solid Senior year to that text which represents Rome's highest original contribution to civilization. Following course may be varied by substituting: second term, Junior, Rhetoric or Satire; third term, Senior, Patristic Latin or Hymnology.



## JUNIOR YEAR.

## I. Early Period: Early Curial Latin: Comedy.

Morphology of Latin ; syntax and diction of epigraphic and literary sources for first period of the language ; text-book and lectures, with class-readings ; early comedy, reading a play of Plautus. Special linguistic study is development of the tongue before the rift came, with Terence, between the spoken language and the literary language of *urbanitas*, and so to prepare for middle and late periods. Lines of curial and Plautine influence upon literature. Subject-matter of curial Latin opens broad field of early institutions and legislation.

## II. Middle Period: Urbanitas: Philosophy.

Sentence-structure, subtle syntactical shadings, concreteness, abundance of verbs, extreme development of hypotaxis, balance and euphony of the periodic structure, classicism in style of the Ciceroni-Augustan age: rise of individualism in style of "silver" age, changes in architecture of the sentence caused by the dying out of patrician families, by influence of the poets, by increase of substantives abstract, etc. ; growing romanticism, distaste for concinnity, fondness for brevity and variety, tendency toward the sensational. Text, Lucretius or Cicero, Seneca. Roman views on the Divine Being, immortality of the soul, "higher law" of ethics, etc. Interpretation of Latin sources for theology and ethics of Stoicism, "for three hundred years the healthiest and best influence in Roman society." Its influence on Roman life and legislation.

III. Late Period: The *Lingua Vulgata*: Christian Latin.

New linguistic vigor coming with Christianity. Sema-siological phenomena emphasized. Word-coinage, foreign influence, "low" Latin, stylistic development. Selections from Tertullian, Cyprian, Lactantius, Augustine, Jerome. Latin Hymns may be read extra hours. Sight-reading of vulgate Bible. Study of Christian vocabulary, grammar and style has especial value for clergymen, students of Romance languages, and as preparatory for Justinian's latinity.

## SENIOR YEAR.

## IV. Law Latin; Instrumental, Juristic, Justinianian: Roman Law.

Philological significance, threefold nature; curial traces; syntactical phenomena of juristic Latin, *termini technici*, prepositional changes, etc.; Justinian's vocabulary, sentence and style. At first, antejustinianian text is translated and interpreted with a resumé of the historical development of the private law. Later, Justinian's redaction is studied, with reading of the *Institutes* and excerpts from the *Digest*, with several full titles. By following closely the language and order of the *Institutes*, supplemented by citations from the larger works, an attempt is made to catch the Roman way of looking at legal questions, as well as to appreciate the stylistic clearness and strength of the great jurists, the peculiarities of Justinian's latinity, and to gain some conception of Rome's world-historic function as law-maker.

OPTIONAL.—Subjects have been: Colloquial Latin, Topography, Archæology, History of Sources and Literature of the Law, Vulgate Bible.

## GREEK LANGUAGE AND LITERATURE.

The Greek course is divided into two parts, the division being at the end of the Sophomore year. The first is prescribed for the entire Classical Section ; the second is one of the electives.

The required course aims to introduce the student to some of the best work of the greatest writers. It is sufficient in quantity to enable him to master the grammatical structure of the language. This, with the acquirement of a good vocabulary, is the end held first of all in view, but it is hoped that all will be enabled in some degree to feel the strength and beauty of the Greek literature.

The course begins with the study of Homer as a continuation of the work done in the preparatory school. After the first term attention is directed chiefly to the Attic prose of the fifth and fourth centuries before Christ. While the particular books read vary somewhat from year to year, there will not be much variation in the authors chosen, which are the following: Homer, Herodotus, Xenophon, Plato, Lysias, Demosthenes, Æschines and Aristophanes. Exercises in writing Greek are constantly required during these two years, based in part on special text-books, and in part on the texts read.

During this course promising students are encouraged to read privately in addition to the work assigned to the class, and are examined thereon, credit being duly given in the annual catalogue.

The elective course running through the Junior and Senior years is divided according to the number of terms into six studies, in each of which a separate field of litera-

ture is chosen. In each term the plan contemplates three features—first, lectures by the instructor ; second, readings assigned to the class for regular recitation, and third, individual tasks assigned to each student for private study, on which he will be expected to make written reports before the end of each term and on which he will be examined.

#### I. History.

##### JUNIOR YEAR.

The centre of the term's work is the history of Thucydides, one entire book at least being read in class. Portions of Herodotus are also taken up. The aim is twofold—on the one hand to give the student a vivid picture of the Peloponnesian war, and to acquaint him by means of lectures with the sources of our knowledge of Greek history, and on the other hand to trace the beginnings of prose-writing as an art.

#### II. Attic Oratory.

The class readings are taken from a number of orators, from Antiphon to Demosthenes, but the latter will generally be the centre of the term's study. The primary purpose is to trace the growth of prose style to its full maturity, but incidentally the history of the fourth century and of Athenian public institutions will be considered. By means of lectures the student is afforded a glimpse into the field of Greek Rhetoric.

#### III. Lyric Poetry.

Selections from a number of poets are read and a careful study of the metrical form is required, both for the proper appreciation of the lyrics themselves and to prepare the way for the easy understanding of the dramatic choruses. Metrical translations are encouraged.

**IV. The Drama.****SENIOR YEAR.**

At least two complete plays, one of Sophocles and one of Æschylus or Euripides, are read in class, and each member of the class will read privately at least one other. Memorizing of choral passages is recommended. The lectures will treat of the development of the drama as a literary type.

**V. Philosophy.**

The class readings will be taken from Plato and Aristotle, and will be varied from year to year. The lectures will attempt to present a general outline of the history of Greek philosophic thought.

**VI. The Attic Revival.**

The study of the last term will centre about Lucian, as an epitome of his time, in his relation to Attic culture and to philosophy and religion.

The elective course is not designed to make specialists, but to fit a man to specialize profitably if he so desires, and, in any case, to give the student an insight into the great types of the Greek literature, some knowledge of the civil history and inner life of the people, and an intelligent conception of the influence of Greece on human thought and culture.

**MODERN LANGUAGES.**

**ENGLISH LANGUAGE AND LITERATURE.**—The course in English embraces in the Freshman year the required study of the history of the English language and its literature, and the critical reading of English classics. The instruc-

tion is given through text-books, lectures and class papers, in recitations, researches, essays and reviews by the student. A course of private reading is prescribed, upon which examinations are held. Essays in literary criticism are required during the Sophomore year. The elective study of the language and literature, including the study of Anglo-Saxon, is pursued during the Junior and Senior years.

The first term of the Junior year is devoted to the study of Poetics and the principles of criticism as introductory to the interpretation and critical study of the greater writers of the several periods. It is the aim of the department in lectures, researches, and collateral reading to review the periods into which the history of English Literature may be divided; to exhibit the philosophy and course of its development; and to interpret and study critically the works of the greater writers in the several types of literary art. In the present course, English Philology is placed in the last term of the Senior year, but in subsequent courses it may be transferred to the first term of the Junior year.

**ELOCUTION.**—The aim is to develop effective delivery in forms of expression. The scope of instruction embraces Physical Culture, Respiration, a Training of the Voice and a cultivation of the powers by which thought is analyzed and presented in synthetic expression.

**EXTEMPORE SPEAKING.**—The Bussing Prizes for excellence in extempore speaking, recently founded, are designed

to cultivate the habit of presenting clearly, forcibly and accurately, and in a manner to convince an audience, the facts and ideas a student has upon themes with which he may fairly be supposed to be somewhat conversant. The repeated competition for these prizes during the four years of the College course has already produced excellent effects.

**GERMAN.**—German is taught three hours a week throughout the Sophomore year as a required subject. During the first term, the grammar is the main object of study, with constant practice in the translation of illustrative sentences, both from German into English and from English into German.

In the second term easy German prose is read, both in set lessons and at sight, and in the third, selections from standard authors for careful translation and for literary analysis. It is the aim of the required course in German to give all the students a competent knowledge of the grammar, and a sufficiently large vocabulary to be able to read ordinary prose with ease, and to pursue further study by themselves without difficulty.

In the Junior and Senior years German is made one of the elective subjects, three hours a week throughout the Junior and four hours throughout the Senior year. The students who choose this subject are taught not only the reading knowledge of modern German, but are drilled in connected conversation and in the study of the older periods of the language from German text-books, the instruction throughout the Senior year being given entirely in the German language.

**FRENCH.**—French is taught three hours a week throughout the Junior year as a required study. A careful phonetic analysis of the pronunciation is insisted on, and the syntax is taught historically, presupposing a thorough acquaintance with the Latin grammar. In the second term a large amount of easy prose is read.

In the third term the harder authors are selected and the literary form is studied as well as the language itself. The required course is intended to give to all a practical acquaintance with the language, wide enough to enable them to read ordinary French prose at sight.

In the Senior year French forms a part of one of the elective courses, being taught four hours a week to such as choose to pursue it. The aim of the course is to make the student acquainted with some of the best products of French literature.

#### MATHEMATICS AND ASTRONOMY.

**MATHEMATICS.**—Algebra and Geometry are required during the Freshman year. The course in Algebra introduces the student to the more abstract portions of the subject: Series, Mathematical Induction, the Method of Indeterminate Coefficients, the Binomial Theorem and the Theory of Equations. At the same time, practical training is given in the use of logarithms and in the solution of higher numerical equations.

In Geometry, the student is required not only to demonstrate theorems relating to solid angles and the solids of Geometry, but also to show how to apply them in original and practical problems in mensuration.

Trigonometry and Analytic Geometry are taught during



the Sophomore year, completing the required course in Mathematics. The Trigonometry studied includes trigonometric analysis and the solution of triangles, with applications to surveying and navigation. The course in Analytic Geometry treats of the representation of curves by means of equations. The properties of the line, circle and conic sections, are studied by the use of Algebraic Analysis. This subject presents considerable difficulty to students not well grounded in Algebra, Geometry and Trigonometry.

Mathematics may be chosen as an elective study throughout the Junior and Senior years. Among the subjects offered in this course are the following :

Higher Algebra. Determinants.  
Theory of Equations.  
Analytic Geometry of Three Dimensions.  
Differential and Integral Calculus.  
Differential Equations.  
Analytic Mechanics.

**ASTRONOMY.**—General Astronomy is taught during the second term to all the members of the Junior Class. The daily recitations are supplemented by lectures on the new astronomy and modern methods and instruments of astronomical research. These lectures are illustrated by photographic lantern views obtained from the leading observatories of the world. Mathematical and Practical Astronomy may be pursued as an elective study in combination with Mathematics throughout the Junior and Senior years. The course then includes :

Introduction to Mathematical Astronomy.  
Theory and Use of Instruments.  
Method of Least Squares.  
Practical Work in the Schanck Observatory.

This course is designed to give the student training in the theory and use of instruments of precision, and to enable him from his own observations of the heavenly bodies to solve various important problems in the applications of Astronomy: the Determination of Time, Longitude, Latitude, Direction of the Meridian, etc. Considerable attention is paid to methods of calculation and to the reduction of observations.

#### CHEMISTRY.

**INORGANIC CHEMISTRY** is taught from a text-book, and fully illustrated by lectures which demonstrate experimentally the points made in the book. The course covers the first term of Sophomore year, with exercises four hours each week. The intention is to give each student such a general knowledge of the science as every educated man should possess. Provision is made in an elective course for those who wish to pursue the subject further.

**ELECTIVE CHEMISTRY.**—In the Junior and Senior years students may elect a course in Chemistry with Laboratory Practice and Lectures. The experimental studies in this department have proved both attractive and profitable to those intending to devote themselves to Law or Medicine, or to business pursuits, as well as to men who intend to teach or to pursue lines of work immediately connected with chemistry and its applications.

The pupil begins by making the experiments in Remsen's Chemistry, thus acquiring by actual experience a familiarity with chemical substances and chemical phenomena.

The study of Qualitative Analysis is next taken up. The student makes the tests, studies the reactions, and proceeds rapidly from the analysis of simple substances to more complex. The method here followed of keeping notes of every step affords the student valuable practice in the three divisions of experimental science—Experiment, Observation and Inference. The theory of analysis is explained in the lectures and recitations on the subject. In connection with this subject, Blowpipe Analysis is also taught.

In the Senior year Quantitative Analysis is commenced, and runs through the first term. In the second and third terms the student may choose either to proceed in Analysis or to study Advanced Experimental Chemistry, including Chemistry of Carbon Compounds.

#### GEOLGY.

A text-book is used in the study of Geology, from which regular lessons are assigned. Each lesson is explained in advance, and amplified by a short lecture, at which time free use is made, by way of illustration, of the valuable collections of the College, which have been carefully arranged with reference to such use. The students are invited and encouraged to make all the use of these collections for which they have time, and the Museum is open for such study at suitable hours each day. At such times not only the mounted specimens in the cases may be inspected, but the drawers are opened, that an opportunity may be had for closer study.

## PHYSICS.

This subject is taught by lectures, and copious additions are made to the matter of the text book. Each point is demonstrated as far as possible; and the relations of the subject to ordinary natural phenomena, the processes of the industrial arts, etc., are pointed out. Students are trained to distinguish the essential from the casual conditions of experiments, as well as to infer from scientific data no more than is certain and warranted. The course begins with Mechanics and proceeds to Heat, Electricity, Sound and Light.

The apparatus is well fitted to illustrate all principles, and such additions are made to it as the industrial applications of science demand.

**ELECTIVE PHYSICS.**—During the Senior year of the Classical Course, Physics is an elective study.

The object of this elective is to furnish a sound, practical foundation to those who expect to engage in industrial pursuits, or in professions which demand acquaintance with the principles of Physics. The work consists of a course of laboratory exercises such as is set forth in Stewart and Gee's Practical Physics, besides many of the experiments described in the text-book used in the lecture course. The facilities of the Physical Laboratory have been greatly increased, so that all essentials are available to students.

## BIOLOGY.

**PHYSIOLOGY AND ZOOLOGY.**—Work in these subjects is required during the first two terms of the Freshman year.

The method of instruction is by lectures and quizzes, supplemented by demonstrations from charts, specimens, dissections, and Auzoux models. The aim is to give the student a bird's-eye view of the principles of Physiology, the structure of animals, and such an acquaintance with the facts of Zoology as shall enable him later to pursue psychological and geological studies with increased profit.

**GENERAL BIOLOGY.**—This is an elective subject in the Junior and Senior years. The distinctive studies of the Course in Biology of the Scientific School must be chosen. The time required is three hours of recitation and four hours of Laboratory Practice in the Junior year, and four hours of recitation and four hours of Laboratory Practice in the Senior year. A detailed account of the studies of this portion of the course is given under the sub-head of General Biology for the Scientific School. The election of Biology includes Zoology, Botany and Entomology, the complete course extending through two years.

#### **BOTANY.**

Students in all courses take Botany two hours a week in the Spring term of the Freshman year. Gray's "Revised Lessons" is used as the text-book in descriptive Botany, and in connection with this, the students familiarize themselves with the methods of plant analysis. Each point considered is, as far as possible, illustrated by living specimens, either grown in the laboratory for purposes of dissection or collected in the fields and forests. Students are taught the methods of preparing and mounting specimens

and are required to make collections of their own during the term.

The work of the Junior and Senior years, required in the Courses in Agriculture and Biology, is open for election by the students of the corresponding years in the classical course.

#### HISTORY AND POLITICAL SCIENCE.

The study of History in the Classical School is begun in the second term of the Sophomore year with the use of a text-book as a guide. The course is planned to cover European history, in outline, from the beginning of the Empire to the outbreak of the French Revolution. The progress of the greater movements in political and social development is traced, and emphasis is laid upon the formation and growth of modern States. In this required part of the course the method of instruction is to some extent topical, and aims to furnish information essential to good citizenship, to cultivate a habit of investigation, and to teach the student how to come to independent conclusions. Students are encouraged to use the library, are given direction in methods of historical work, and are taught the value of historical sources. A constant use of the historical atlas is required of the student throughout the prescribed courses.

**ELECTIVE HISTORY.**—Elective courses are open to Juniors and Seniors, offering facilities for advanced and systematic work in special periods of history, and for a study of the

origin and development of political institutions. The courses include both European and American history.

The method of study is by lectures and topics. It aims to cultivate a spirit of original research and places emphasis upon library investigations. For students of the Senior Class a Seminary of History and Political Science is organized, in which papers embracing the results of independent original study are reported.

The following is an outline of the elective courses:

JUNIOR YEAR.

I. The Periods of the Renaissance and the Reformation.

The work will consist chiefly of library investigations and critical examinations of reports growing out of these studies. The class will meet three times each week during the first and second terms.

II. English Constitutional History.

Instruction will be given by text-books, lectures and required readings on assigned topics. This is taken as an introduction to American History. Three times each week during the third term.

SENIOR YEAR.

III. Colonial History of America, followed by the Constitutional and Political History of the United States.

The methods of instruction are in general the same as in the Junior year. It is designed to be a critical study of American history. Attention is especially given to the growth of nationality and to the development of the Constitution. Three hours each week during the first and second terms.

**IV. Comparative Study of the Modern Constitutions.**

In this course the Constitutions of modern European States are studied and compared with that of the United States. A part of the second and the third term, three hours each week.

**V. Seminary of History and Political Science.**

This is designed for original investigations, and for reports upon the current historical and economic literature. One hour each week throughout the year.

**POLITICAL ECONOMY.**—The Senior Class, in both the Classical and Scientific Schools, receives instruction in the principles of Political Economy four hours weekly during the first term. In addition to the use of a text-book, lectures, formal and informal, are given, discussions are held, special topics are assigned to individuals for careful study, the results of which are read before the class, and essays are prepared by the class on some subject chosen by the writer from a number relating to this science.

**CONSTITUTIONAL LAW.**—The Senior Class, in both Schools, pursues the study of Constitutional Law four hours weekly during the Winter term. Cooley's Principles of Constitutional Law is used as a text-book. Lectures are read by the President before the class on the historical development of the Constitution and some of the more important decisions of the Supreme Court are analyzed, for example those relating to the prohibition of State laws impairing the Obligation of Contracts, the Legal Tender



Cases and others of importance and paramount significance. The aim is to ground all the students in a knowledge of the elements of Constitutional Law and to give a special preparation to those about to choose the profession of the law. This is particularly kept in view in assigning the subjects for the essays which accompany the other work of the term.

**INTERNATIONAL LAW.**—This subject is taken up the last term of the Senior year. Lectures are given by the President four hours weekly. The peculiar character of this branch of law is dwelt upon, its development, the authorities and sources, and its present status.

**CIVICS.**—The President meets the Freshman Class of both Schools one hour each week for their instruction by use of text-book and lecture in the elements of Civics and the duties of the citizen.

**MORAL PHILOSOPHY AND THE ENGLISH BIBLE.**

These studies are taken up during the Senior year. Those of the Classical section who so elect pursue the study of Butler's Analogy during the first term, and of Calderwood's Moral Philosophy through the second and third terms. The Classical section receive instruction by lectures on the English Bible during the second term.

Both sections of the Senior Class pursue the study of Practical Ethics during the third term.

## PHILOSOPHY AND LOGIC.

**PHILOSOPHY.**—The Juniors are required to prepare five recitations a week in Hill's Psychology and Deussen's Elements of Metaphysics during the first term. Fowler's and Jevons' Logics will be studied during the second term. Special courses in Philosophy will be given in Porter's Treatise on the Human Mind, Weber's History of Philosophy, Windelband's History of Philosophy, Ueberweg's, Mill's, Ballantine's, Hibben's and Ryland's Logics. In the Senior year courses in like manner will be given in Kant's Kritik, Carus' Primer of Philosophy, Porter's Human Mind, Descartes' Principia and Meditations and Hegel's Logic.

**ELECTIVE COURSE IN PHILOSOPHY AND LOGIC.**—This course extends through the Junior and Senior years. It is intended to give an outline of the History of Philosophy, from the earliest period of Greek Speculation to the present time. Together with special Histories of Philosophy, such as Ueberweg's, Erdmann's and Windelband's, there will be studied representative works in Speculation, such as the following: Aristotle, Metaphysics and De Anima; Plato's Theætetus and Parmenides; Fragmenta Philosophorum Græcorum in the original; Leibnitz's Nouveaux Essais; Descartes' Principia and Method; Spinoza's Ethica; Kant's Kritik; Hume's Treatise on Human Nature; Berkeley's Principles of Knowledge; Janet's Final Causes; Jevons' Principles of Science; Bacon's Novum Organum; Herschell's Discourse on Philosophy; Whewell's History of the Inductive Sciences; Sir William Hamilton's Lectures on Metaphysics.

In Logic, the Organon of Aristotle in the original will be taught, together with Trendelenberg's *Elementa* and *Logische Untersuchungen*; Hegel's Logic, Harris' Translation; Ueberweg's Logic, Lindsay's Translation; Mill's, Bosanquet's, Bain's and Keynes' Logics; Davis' Theory of Thought and Jevons' Studies in Deductive Logic. Essays will be required of the students on the subjects studied, and syllabi of the lectures given.

In the various prizes which are offered there will be given especial inducement for advanced work. Classes will be formed of those students who offer themselves as candidates, under the general rule governing extra work which is to receive special recognition, and these will undergo a weekly review, on the books in which the prize examination will be held, and on the subjects assigned for the prize theses. These recitations will involve critical study, and be unsparing in rigor, with a view to insure thorough work, and elicit original research. These classes for special work will be at hours agreed upon between Professor and student, and additional to schedule recitations.

#### THE FINE ARTS.

During the second term of this year there will be for the Seniors a course of lectures by Professor Van Dyke on the History of Painting, covering the ground from the earliest records of art in history to the present day. Van Dyke's "History of Painting" will be used as a text-book and all the lectures will be illustrated by lantern-slides and the casts, photographs and facsimiles of the Fine Arts collection.

**HISTORY AND ART OF TEACHING.**

Instruction is given by means of lectures during one term of the Senior year to the students of the Classical School. Others who expect to teach, or who are interested in the subject, are allowed to attend the lectures.

The object of the course is to make the student acquainted with the most important educational theories and their place in history, and to introduce him to the study of the science and art of teaching. The principal educational classics are considered, and such practical work is done by reports and discussions as the time permits.

**PHYSICAL TRAINING.**

Exceptionally fine opportunities for Physical Training are afforded to all students by the new Robert F. Ballantine Gymnasium and the Neilson Field, both of which are elsewhere described.

At the beginning of his Freshman year each student is given a physical examination conducted upon the same plan as that now in use at the leading colleges, and a complete record made of his physical condition. This examination is repeated from time to time and thus affords valuable information concerning the growth and development of the individual. At the time of the examination, an anthropometric chart is drawn, showing the relation of the individual to the normal standard in size, strength and symmetry. From the information thus obtained, cards are made out specifying the exercises most suitable for each case.

For the Classical section of the Sophomore and Freshman Classes attendance at gymnastic exercise is required for four half-hour periods weekly throughout the year. For these classes a graded course has been arranged. To the Freshmen are taught free exercises, exercises with Indian clubs, exercises upon the so-called "heavy" apparatus, and track and field athletics. The Sophomores use dumb-bells, wands and the heavy apparatus, and also have instruction in athletics.

With all other students gymnasium attendance is optional. Classes are formed to suit the general convenience and a progressive course of instruction followed.

During the Winter term a class is formed from the two higher classes for instruction in fencing with foils and single-sticks.

Swimming is regularly taught during the Spring term.

## SCIENTIFIC SCHOOL.

## RUTGERS SCIENTIFIC SCHOOL,

BY ACT OF THE LEGISLATURE OF NEW JERSEY, APPROVED APRIL 4TH, 1864,  
 CONSTITUTED THE STATE COLLEGE FOR THE BENEFIT OF AGRICULTURE  
 AND THE MECHANIC ARTS, IN ACCORDANCE WITH THE LAW  
 OF THE UNITED STATES OF JULY 2D, 1862.

## BOARD OF VISITORS.

(APPOINTED BY THE GOVERNOR.)

## FIRST CONGRESSIONAL DISTRICT.

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### 1. ADMISSION.

Every applicant for admission must be at least sixteen years of age, and must submit to the President proper testimonials of a good moral character. If an applicant for a Free State Scholarship he must also present to the President a certificate of appointment.

**EXAMINATIONS AT THE COLLEGE.**—Examinations for admission will be held on the Friday and Saturday preceding Commencement week, June 11th and 12th, 1897, beginning at 10 o'clock A. M. on Friday, in the Registrar's office. Applicants may also be examined on Tuesday, September 21st, at the same hour and place. Students are advised to be present for examination in June.

**STATE COMPETITIVE EXAMINATIONS.**—Students will also be admitted who pass the State competitive examinations, which will be held in the Court House of each county on Saturday, June 5th, 1897. For the requirements of the State law see page 55.

Only such students are admitted with conditions as are, in the opinion of the Faculty, so nearly prepared as to be able to make up all deficiencies during the first two months of the term, meanwhile maintaining a good standing in their class. Conditioned students will have an opportunity given them to remove their entrance conditions as early as possible in the first term. It is expected that all entrance conditions will be made up before the Thanksgiving recess.

**CERTIFICATES.**—From certain preparatory schools of established reputation students are admitted without examination upon the Principal's certificate that they have completed the required amount of work and are prepared to enter College. Blanks for such certificates will be furnished upon application. See page 16.

**ADVANCED STANDING.**—Students may enter advanced classes either at the beginning of the College year or at other times, if they sustain a satisfactory examination both on the preliminary studies and on those already passed over by the class which they propose to enter. Full equivalents will be accepted.

**SPECIAL STUDENTS.**—In exceptional cases students properly prepared for admission to the Freshman Class may, by special vote of the Faculty, be permitted to pursue select branches of study. Such students are required to take examinations, all work in Composition and Elocution and Military Drill with the class with which they have studied.

#### FREE SCHOLARSHIPS.

**STATE SCHOLARSHIPS, ACT OF 1864.**—Under this law, a certain number of students from the State of New Jersey are received into the Scientific School, and educated free of expense for tuition. These students are admitted to free scholarships on the recommendation of the Superintendent of Schools in each county after passing the required examinations. The Scholarships provided by the



Act of 1864 are distributed among the counties in proportion to their population, as follows :

ATLANTIC, . . . 1	GLoucester, . . . 1	OCEAN, . . . . 1
BERGEN, . . . 1	HUDSON, . . . 6	PASSAIC. . . . 2
BURLINGTON, . . . 8	HUNTERDON, . . . 1	SALEM, . . . . 1
CAMDEN, . . . 2	MERCER, . . . 2	SOMERSET, . . . 1
CAPE MAY, . . . 1	MIDDLESEX, . . . 2	SUSSEX, . . . . 1
CUMBERLAND, . . . 1	MONMOUTH, . . . 2	UNION, . . . . 2
ESSEX, . . . . 6	MORRIS, . . . . 2	WARREN, . . . . 1

**SCHOLARSHIPS-AT-LARGE.**—In June, 1888, the Trustees of Rutgers College provided ten additional free State scholarships.

**STATE SCHOLARSHIPS, ACT OF 1890.**—By a law passed March 31st, 1890, a number of free scholarships, one for each assembly district for each year, is established and offered to students in all parts of the State. The candidates for these scholarships are selected as follows: A competitive examination, under the direction of the City Superintendents and the County Superintendent of Education in each county, shall be held at the County Court House in each county of the State, upon the first Saturday in June in each year. If several candidates for appointment pass the examination from the same assembly district, all who are suitably qualified shall receive appointment to such free scholarships, excess from certain assembly districts being counterbalanced by vacancies in other assembly districts, provided only that the entire number of appointees shall not exceed the entire number of Free Scholarships created by the State.

Letters of inquiry to the President, or to the Registrar, will receive careful attention.

**REQUIREMENTS FOR ADMISSION.**

The following are the subjects in which those who wish to enter the Freshman Class of the Scientific School are examined. Since all are such as can be acquired in our best common schools, it is insisted that the preparation in them shall be thorough and complete.

**1. MATHEMATICS.**

**ARITHMETIC.**—Fundamental Operations; Common and Decimal Fractions; Denominate Numbers, including the Metric System; Percentage, including Interest and Discount; Proportion; Square and Cube Root.

In preparing the student for this course, it is recommended that he be drilled thoroughly in Arithmetic, as a clear understanding of its simple elementary and practical principles is essential to a good Mathematician.

**ALGEBRA** through Arithmetic, Geometric and Harmonic Progressions, or the first seventeen chapters of Bowser's College Algebra.

His preparation in Algebra should be very thorough. In addition to understanding the PRINCIPLES of the science he must fix them in his memory, and learn their bearing and utility, and for this reason he should pay great attention to the solution of practical examples. What is needed is ability to solve ordinary examples with facility and to explain them thoroughly.

Attention is specially called to the solution of Simultaneous Quadratic Equations, and of Equations of Higher Degrees than the Second, which may be reduced to the quadratic form, and then solved by the methods of solving quadratics.

The student should form the habit of arranging his work, whether on the blackboard or on paper, in a neat and orderly manner.

**GEOMETRY.**—The whole of Plane and Solid Geometry.

## 2. THE ENGLISH BRANCHES.

## ENGLISH GRAMMAR.

## SPELLING.

A SHORT ENGLISH ESSAY is also required, to be written at the examination, on some theme drawn from books announced in advance; the essay to be correct in spelling, punctuation, division into paragraphs, grammar and expression. In June and September, 1897, the themes will be drawn from these books, which all students who apply for admission then should have read carefully: Shakespeare's *As You Like It*; Defoe's *History of the Plague in London*; Irving's *Tales of a Traveler*; Hawthorne's *Twice Told Tales*; Longfellow's *Evangeline*; George Eliot's *Silas Marner*.

The following books are set apart for examination upon subject-matter, form and structure, 1897: Shakespeare's *The Merchant of Venice*; Burke's *Speech on Conciliation with America*; Scott's *Marmion*; Macaulay's *Life of Samuel Johnson*.

In 1898, the examination will be upon Milton's *Paradise Lost*, Books I. and II.; Pope's *Iliad*, Books I. and XXII.; *The Sir Roger de Coverley Papers* in the *Spectator*; Goldsmith's *Vicar of Wakefield*; Coleridge's *Ancient Mariner*; Southey's *Life of Nelson*; Carlyle's *Essay on Burns*; Lowell's *Vision of Sir Launfal*; Hawthorne's *House of the Seven Gables*.

The following books are set apart for examination upon subject-matter, form and structure, 1898: Shakespeare's *Macbeth*; Burke's *Speech on Conciliation with America*; De Quincey's *The Flight of a Tartar Tribe*; Tennyson's *The Princess*.

**HISTORY OF THE UNITED STATES.**—Johnston's *History of the United States*, or its equivalent.

Students often lack thorough or recent preparation in this subject. A more accurate knowledge of American History has become necessary as preliminary to the systematic instruction now given on the duties and relations of American citizenship.

## 3. SCIENCE.

**PHYSICS.**—Students are required to show satisfactory acquaintance with Wells' or Cooley's *Natural Philosophy*, or Peck's *Ganot's Physics*.

**CHEMISTRY.**—Such knowledge of Chemistry as may be obtained from a thorough study of Remsen's, Cooley's or Steele's Chemistry complete. Remsen's *Elements of Chemistry* is recommended, because Remsen's text-books are used during the course.

## 2. COURSES OF STUDY.

During the first year the studies of the full courses are the same, and are designed to furnish a suitable introduction to the pursuit of the higher branches in either course.

The elements of Agriculture, of Biology and of Botany are taught during the first, second and third terms respectively. Mathematics (Algebra, Trigonometry and Surveying), Draughting, English and French are taught throughout the year.

At the end of the first year students elect to pursue one of the full courses, and for the remaining three years their studies are directed with particular reference to the choice made. Some studies which go to the equipment of the intelligent citizen, whatever his occupation, such as History, English Literature, Political Economy, Practical Ethics, Astronomy and others, are interspersed throughout the entire four years, in order that students may not only acquire a thorough preparation for their special pursuits in life, but may at the same time receive a liberal training which will fit them to discharge wisely and usefully the duties of good citizenship.

Five distinct courses of study are included in the schedule which follows:

- I. A COURSE IN AGRICULTURE.
- II. A COURSE IN CIVIL ENGINEERING AND MECHANICS.
- III. A COURSE IN CHEMISTRY.
- IV. A COURSE IN ELECTRICITY.
- V. A COURSE IN BIOLOGY.

Exercises in English are required throughout the entire course, as follows: Essays, two each term; Forensics, four times each term, Declamations and Extempore Speaking during the Freshman and Sophomore years and Orations and Extempore Speaking during the Junior and Senior years.

Military Drill is required of all students in the Scientific School twice each week throughout the entire course.

## FRESHMAN CLASS.

*Uniform Schedule for all Scientific Courses.***FIRST TERM, THIRTEEN WEEKS.**

Hours a week.

1. FRENCH.—Bevier's French Grammar; Easy Prose.....	5
2. MATHEMATICS.—Bowser's Algebra, completed.....	5
3. PRINCIPLES OF AGRICULTURE.—Voorhees.....	2
4. RHETORIC.—Clark; Lectures; Essays.....	2
5. CIVICS.....	1
6. DRAUGHTING.—Practice in Use of Instruments; Geometrical Problems and Applications.....	4

**SECOND TERM, THIRTEEN WEEKS.**

1. FRENCH.—Modern Drama; sight reading.....	5
2. MATHEMATICS.—Bowser's Trigonometry, Plane and Spherical.....	5
3. ZOOLOGY.—Orton; Lectures.....	2
4. ENGLISH LITERATURE.—Pancoast's Introduction to English Literature,	4
5. DRAUGHTING.—Projections.....	4

**THIRD TERM, TEN WEEKS.**

1. FRENCH.—Lamartine or Hugo; Prose Composition.....	5
2. MATHEMATICS.—Surveying, Carhart.....	5
3. BOTANY.—Gray's Revised Lessons.....	2
4. ENGLISH LITERATURE.—Pancoast's Introduction to English Literature,	4
5. DRAUGHTING.—Free-hand Drawing and Perspective.....	4

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Agriculture, Course in  
Chemistry, and Course in Biology.*

## FIRST TERM.

Hours a week.

1. EXPERIMENTAL CHEMISTRY.—Remsen (first two months).....	5
2. BLOWPIPE ANALYSIS.—Landauer; Lectures (last month of term).....	4
3. CHEMISTRY.—Remsen; Lectures, with Experiments.....	4
4. PHYSICS.—Ganot; Lectures.....	3
5. GERMAN.—Thomas' Practical German Grammar; Easy Prose.....	3
6. CHEMICAL LABORATORY PRACTICE.—Experimental Chemistry and Blowpipe Analysis .....	8

## SECOND TERM.

1. QUALITATIVE ANALYSIS.—Thorpe; Fresenius; Lectures.....	5
2. CHEMISTRY.—Remsen; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures .....	3
4. GERMAN.—Modern Drama; sight reading.....	4
5. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	3

## THIRD TERM.

1. QUALITATIVE ANALYSIS.—Thorpe; Fresenius; Lectures.....	5
2. CHEMISTRY.—Organic Chemistry; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—Scientific Prose; Prose Composition.....	4
5. CHEMICAL LABORATORY PRACTICE.—Qualitative Analysis.....	3

## SOPHOMORE CLASS.

*Uniform Schedule for Course in Civil Engineering and  
Mechanics and Course in Electricity.*

## FIRST TERM.

Hours a week.

1. DESCRIPTIVE GEOMETRY.—Church. ....	5
2. CHEMISTRY.—Remsen; Lectures, with Experiments.....	4
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—Thomas' Practical German Grammar; easy prose.....	3
5. DRAUGHTING.—Projections.....	4

## SECOND TERM.

1. ANALYTIC GEOMETRY.—Bowser .....	5
2. CHEMISTRY.—Remsen; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—Modern Drama; sight reading.....	4
5. DRAUGHTING.—Projections; Intersections and Development of Sur- faces, etc .....	4

## THIRD TERM.

1. ANALYTIC GEOMETRY.—Bowser, completed.....	5
2. CHEMISTRY.—Organic Chemistry; Lectures, with Experiments.....	3
3. PHYSICS.—Ganot; Lectures.....	3
4. GERMAN.—Scientific Prose; Prose Composition.....	4
5. DRAUGHTING.—Shades and Shadows; Linear Perspective, etc.....	4

## JUNIOR CLASS.

*Schedule for Course in Agriculture.*

	FIRST TERM.	Hours a week.
1. AGRICULTURE.—Agricultural Chemistry.....	2	2
2. GENERAL BIOLOGY.—Parker's Lessons.....	3	3
3. PHYSICS.—Steam Engine and other Prime Motors.....	2	2
4. MENTAL PHILOSOPHY.—Hill's Psychology; Janet's Final Causes.....	2	2
5. HISTORY.—Myers' Mediaeval and Modern History.....	5	5
6. MILITARY SCIENCE.....	1	1
7. CHEMICAL LABORATORY PRACTICE.....	4	4
8. BIOLOGICAL LABORATORY PRACTICE.....	4	4
SECOND TERM.		
1. AGRICULTURE.—Soils and Crops.....	2	2
2. ANATOMY OF INVERTEBRATES.....	2	2
3. VEGETABLE HISTOLOGY.....	1	1
4. MINERALOGY.—Dana.....	2	2
5. LOGIC.—Jevons', Mill's, unabridged.....	2	2
6. HISTORY.—Myers' Mediaeval and Modern History.....	5	5
7. ASTRONOMY.—Young's Elements.....	3	3
8. ZOOLOGICAL LABORATORY PRACTICE.....	4	4
9. BOTANICAL LABORATORY PRACTICE.....	4	4
THIRD TERM.		
1. VEGETABLE HISTOLOGY.....	4	4
2. ANATOMY AND PHYSIOLOGY OF INSECTS.....	4	4
3. HISTORY OF CIVILIZATION.....	5	5
4. MILITARY SCIENCE.....	2	2
5. BOTANICAL LABORATORY PRACTICE.....	4	4
6. ENTOMOLOGICAL LABORATORY PRACTICE.....	2	2

## SENIOR CLASS.

	FIRST TERM.	
1. AGRICULTURE.—Manures and Manuring.....	4	
2. SYSTEMATIC ENTOMOLOGY.....	4	
3. ANATOMY OF VERTEBRATES.....	2	
4. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	
5. GEOLOGY.—Dana.....	2	
6. ZOOLOGICAL LABORATORY PRACTICE.....	4	
7. ENTOMOLOGICAL LABORATORY PRACTICE.....	2	
SECOND TERM.		
1. AGRICULTURE.—Animal Nutrition.....	4	
2. ANATOMY AND HISTOLOGY OF MAMMALS.....	3	
3. VEGETABLE PHYSIOLOGY.....	2	
4. CONSTITUTIONAL LAW.—Cooley; Lectures.....	4	
5. GEOLOGY.—Dana.....	2	
6. MILITARY SCIENCE.....	1	
7. ZOOLOGICAL LABORATORY PRACTICE.....	4	
8. BOTANICAL LABORATORY PRACTICE.....	4	
THIRD TERM.		
1. AGRICULTURE.—Breeds and Breeding.....	3	
2. ECONOMIC ENTOMOLOGY.....	4	
3. VEGETABLE PATHOLOGY.....	2	
4. INTERNATIONAL LAW.—Lectures.....	4	
5. PRACTICAL ETHICS.....	2	
6. BOTANICAL LABORATORY PRACTICE.....	4	
7. ENTOMOLOGICAL LABORATORY PRACTICE.....	2	
8. THESIS.....		



## JUNIOR CLASS.

*Schedule for Course in Civil Engineering and Mechanics.*

FIRST TERM.		Hours a week.
1. DIFFERENTIAL CALCULUS.—Bowser.....	5	5
2. PHYSICS.—Steam Engine and other Prime Motors.....	2	2
3. MENTAL PHILOSOPHY.—Hill's Psychology; Janet's Final Causes.....	2	2
4. HISTORY.—Myers' Mediæval and Modern History.....	5	5
5. MILITARY SCIENCE.....	1	1
6. DRAUGHTING.—Lettering.....	4	4

SECOND TERM.		
1. DIFFERENTIAL CALCULUS.—Completed; Bowser's Integral Calculus....	5	5
2. MINERALOGY.—Dana.....	2	2
3. LOGIC.—Jevons', Mill's, unabridged.....	2	2
4. HISTORY.—Myers' Mediæval and Modern History.....	3	3
5. ASTRONOMY.—Young's Elements.....	3	3
6. DRAUGHTING.—Plain and Colored Topography; Machine Construction; India Ink and Color Shading, etc.....	4	4

THIRD TERM.		
1. INTEGRAL CALCULUS.—Completed.....	5	5
2. RAILROAD CURVES.—Henck's Field Book.....	3	3
3. HISTORY OF CIVILIZATION.....	5	5
4. MILITARY SCIENCE.....	2	2
5. DRAUGHTING.—Copying, Tracing, Blue-Print Copying, Railroad Profiles and Cross Sections; Field Work.....	4	4

## SENIOR CLASS.

FIRST TERM.		
1. MECHANICS.—Bowser.....	5	5
2. BRIDGE-BUILDING.....	4	4
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4	4
4. GEOLOGY.—Dana.....	2	2
5. DRAUGHTING.—Graphical Statics, with Applications.....	4	4

SECOND TERM.		
1. MECHANICS.—Bowser, completed.....	5	5
2. BRIDGE-BUILDING.—Completed; Bowser's Hydromechanics.....	4	4
3. CONSTITUTIONAL LAW.—Cooley; Lectures.....	4	4
4. GEOLOGY.—Dana.....	2	2
5. MILITARY SCIENCE.....	1	1
6. DRAUGHTING.—Graphical Statics, with Applications.....	4	4

THIRD TERM.		
1. HYDROMECHANICS.—Completed.....	5	5
2. GEODESY.—Lectures.....	4	4
3. INTERNATIONAL LAW.—Lectures.....	4	4
4. PRACTICAL ETHICS.....	2	2
5. DRAUGHTING.—Thefts.....	4	4

## JUNIOR CLASS.

*Schedule for Course in Chemistry.*

	FIRST TERM.	Hours a week.
1. QUANTITATIVE ANALYSIS.—Fresenius; Cairns; Lectures .....	2	
2. ORGANIC CHEMISTRY.—Remsen .....	2	
3. PHYSICS.—Steam Engine and other Prime Motors .....	2	
4. MENTAL PHILOSOPHY.—Hill's Psychology; Janet's Final Causes .....	2	
5. HISTORY.—Myers' Mediæval and Modern History .....	5	
6. MILITARY SCIENCE .....	1	
7. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis .....	10	

	SECOND TERM.	
1. ORGANIC CHEMISTRY.—Remsen .....	4	
2. MINERALOGY.—Dana; CRYSTALLOGRAPHY .....	2	
3. LOGIC.—Jevons', Mill's, unabridged .....	2	
4. HISTORY.—Myers' Mediæval and Modern History .....	3	
5. ASTRONOMY.—Young's Elements .....	3	
6. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis .....	10	

	THIRD TERM.	
1. STOICHIOMETRY .....	3	
2. DETERMINATIVE MINERALOGY .....	5	
3. HISTORY OF CIVILIZATION .....	5	
4. MILITARY SCIENCE .....	2	
5. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis .....	10	

## SENIOR CLASS.

	FIRST TERM.	
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures .....	3	
2. PHYSICAL CHEMISTRY.—Lectures .....	5	
3. REPORTS.—Recent Chemical Literature .....	1	
4. POLITICAL ECONOMY.—Walker and Perry; Lectures .....	4	
5. GEOLOGY.—Dana .....	2	
6. CHEMICAL LABORATORY PRACTICE.—Quantitative Analysis .....	10	

	SECOND TERM.	
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures .....	4	
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures .....	4	
3. REPORTS.—Recent Chemical Literature .....	1	
4. CONSTITUTIONAL LAW.—Cooley; Lectures .....	4	
5. GEOLOGY.—Dana .....	2	
6. MILITARY SCIENCE .....	1	
7. CHEMICAL LABORATORY PRACTICE.—Organic Chemistry .....	10	

	THIRD TERM.	
1. APPLIED CHEMISTRY.—Wagner's Technology; Lectures .....	3	
2. PRINCIPLES AND THEORIES OF CHEMISTRY.—Lectures .....	5	
3. REPORTS.—Recent Chemical Literature .....	1	
4. INTERNATIONAL LAW.—Lectures .....	4	
5. PRACTICAL ETHICS .....	2	
6. THESIS .....	1	
7. CHEMICAL LABORATORY PRACTICE.—Organic Chemistry .....	10	

## JUNIOR CLASS.

*Schedule for Course in Electricity.*

## FIRST TERM.

Hours a week.

1. DIFFERENTIAL CALCULUS.—Bowser.....	5
2. PHYSICS.—Steam Engine and other Prime Motors.....	2
3. MENTAL PHILOSOPHY.—Hill's Psychology; Janet's Final Causes.....	2
4. HISTORY.—Myers' Mediæval and Modern History.....	5
5. MILITARY SCIENCE.....	1
6. DRAUGHTING.—Machine Construction.....	4
7. LABORATORY.—Physical Measurements.....	2

## SECOND TERM.

1. DIFFERENTIAL CALCULUS.—Completed; Bowser's Integral Calculus...	5
2. MINERALOGY.—Dana.....	2
3. LOGIC.—Jevons', Mill's unabridged.....	2
4. HISTORY.—Myers' Mediæval and Modern History.....	3
5. ASTRONOMY.—Young's Elements.....	3
6. DRAUGHTING.—India Ink and Color Shading, etc.....	4
7. LABORATORY.—Mechanics; Measurement of Power.....	2

## THIRD TERM.

1. INTEGRAL CALCULUS.—Completed.....	5
2. MECHANICS OF MACHINERY.....	3
3. HISTORY OF CIVILIZATION.....	5
4. MILITARY SCIENCE.....	2
5. DRAUGHTING.—Construction, Copying, Tracing, Blue-Print Copying...	4
6. LABORATORY.—Heat; Magnetic and Electrical Measurement.....	2

## SENIOR CLASS.

## FIRST TERM.

1. MECHANICS.—Bowser.....	5
2. ELEMENTARY AND PRACTICAL ELECTRICITY AND MAGNETISM.....	4
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4
4. GEOLOGY.—Dana.....	2
5. DRAUGHTING.—Graphical Statics, with Applications.....	4
6. LABORATORY.—Electrical Measurement.....	2

## SECOND TERM.

1. MECHANICS.—Bowser's, completed.....	5
2. DYNAMO-ELECTRIC MACHINERY.....	4
3. CONSTITUTIONAL LAW.—Cooley; Lectures.....	4
4. GEOLOGY.—Dana.....	2
5. MILITARY SCIENCE.....	1
6. DRAUGHTING.—Graphical Statics, with Applications.....	4
7. LABORATORY.—Electrical Testing; Dynamic Machines.....	2

## THIRD TERM.

1. MATHEMATICAL THEORY OF ELECTRICITY.....	5
2. THEORY OF ALTERNATING CURRENTS.....	4
3. INTERNATIONAL LAW.—Lectures.....	4
4. PRACTICAL ETHICS.....	2
5. LABORATORY.—Dynamic Machines.....	2
6. DRAUGHTING.—Thesis.....	2

## JUNIOR CLASS.

*Schedule for Course in Biology.*

## FIRST TERM.

Hours a week.

1. GENERAL BIOLOGY.—Parker's Lessons.....	5
2. PHYSICS.—Steam Engine and other Prime Motors.....	2
3. MENTAL PHILOSOPHY.—Hill's Psychology; Janet's Final Causes.....	2
4. HISTORY.—Myers' Mediæval and Modern History.....	5
5. MILITARY SCIENCE.....	1
6. BIOLOGICAL LABORATORY PRACTICE.....	4

## SECOND TERM.

1. ANATOMY OF INVERTEBRATES.....	3
2. VEGETABLE HISTOLOGY.....	2
3. MINERALOGY.—Dana.....	2
4. LOGIC.—Jevons', Mill's, unabridged.....	2
5. HISTORY.—Myers' Mediæval and Modern History.....	3
6. ASTRONOMY.—Young's Elements.....	3
7. ZOOLOGICAL LABORATORY PRACTICE.....	4
8. BOTANICAL LABORATORY PRACTICE.....	4

## THIRD TERM.

1. VEGETABLE HISTOLOGY.....	4
2. ANATOMY AND PHYSIOLOGY OF INSECTS.....	4
3. HISTORY OF CIVILIZATION.....	5
4. MILITARY SCIENCE.....	2
5. BOTANICAL LABORATORY PRACTICE.....	4
6. ENTOMOLOGICAL LABORATORY PRACTICE.....	2

## SENIOR CLASS.

## FIRST TERM.

1. ANATOMY AND EMBRYOLOGY OF VERTEBRATES.....	4
2. SYSTEMATIC ENTOMOLOGY.....	5
3. POLITICAL ECONOMY.—Walker and Perry; Lectures.....	4
4. GEOLOGY.—Dana.....	2
5. ZOOLOGICAL LABORATORY PRACTICE.....	4
6. ENTOMOLOGICAL LABORATORY PRACTICE.....	2

## SECOND TERM.

1. ANATOMY AND HISTOLOGY OF MAMMALS.....	5
2. VEGETABLE PHYSIOLOGY.....	4
3. CONSTITUTIONAL LAW.—Cooley; Lectures.....	4
4. GEOLOGY.—Dana.....	2
5. MILITARY SCIENCE.....	1
6. ZOOLOGICAL LABORATORY PRACTICE.....	4
7. BOTANICAL LABORATORY PRACTICE.....	4

## THIRD TERM.

1. ECONOMIC BOTANY.....	4
2. SYSTEMATIC AND ECONOMIC ENTOMOLOGY.....	5
3. VEGETABLE PATHOLOGY.....	4
4. INTERNATIONAL LAW.—Lectures.....	4
5. PRACTICAL ETHICS.....	2
6. BOTANICAL LABORATORY PRACTICE.....	4
7. ENTOMOLOGICAL LABORATORY PRACTICE.....	2
8. THESIS.....	

**DESCRIPTION OF THE COURSES OF STUDY.****PRESCRIBED STUDIES.**

All candidates for the degree of B.S. pursue a certain number of subjects in common in addition to the more specialized studies of the various elective courses. The purpose is to give all who take the bachelor's degree such general training as shall make them broadly-educated and intelligent citizens. These prescribed studies may be grouped as follows:

**AGRICULTURE AND THE NATURAL SCIENCES.**

**AGRICULTURE** is required two hours a week during the first term of the Freshman year. The aim is to give the student definite information concerning the formation and composition of soils, the growth and development of plants and animals, the transformations and uses of the various farm products, and the relation of farming to other industries.

**ZOOLOGY** is required in the Winter term, Freshman year, two hours weekly. Systematic Zoology in the old sense is not taught. The aim is to present, as far as the time will allow, a few of the great biological principles which are illustrated in the animal kingdom. There is, therefore, introduced considerable Physiology as well as Morphology. The student gets a practical knowledge of what is meant by anatomy, histology, development, classification, nutrition, protoplasm, differentiation, heredity, etc. Orton's Zoology is used as a text-book, supplemented by demonstrations from specimens, charts and Auzoux models.

**BOTANY.**—Students in all courses take Botany two hours a week in the third term of the Freshman year, and the ground covered is embraced by Gray's "Revised Lessons." In connection with the text-book work, each student makes drawings and descriptions of leaves, stems, roots and other parts of plants. This is followed by a thorough study of the flower from living specimens gathered in the field. The terms used in Descriptive Botany are dwelt upon, so that each member of the class becomes familiar with the methods of determining the botanical names of plants, and acquaints himself with the relationship of genera and orders. Students are taught the methods of preparing and mounting herbarium specimens, and are required to make collections of their own.

**GENERAL CHEMISTRY** is taught from a text-book fully illustrated by experimental lectures, during two terms of the Sophomore year. An endeavor is made to make the student understand the sure basis of fact on which the science of Chemistry rests, and to reason for himself from these facts. He is also taught to make a careful distinction between facts and theories, and not to confound that which is proved with that which is merely speculative.

**ORGANIC CHEMISTRY** begins in the third term of Sophomore year, so that students looking toward Agriculture and Biology, as well as Chemistry, can get some idea of the chemical changes connected with their prospective subjects before more detailed study comes. The general behavior of carbon in its compounds is considered, and the differ-

ent classes it forms, as well as their relations, are studied, so that the fundamental chemical changes concerned in the growth of plant or animal can be properly understood by students in these courses. It is continued through the first two terms of the Junior year in the Chemical Course only.

**PHYSICS.**—Three hours weekly, during the entire Sophomore year, are devoted to this subject. The presentation is by lectures, covering the ground of the text-books of Ganot and Deschanel. Recitations are both oral and written, special attention being given to deduction of the general from particulars, as well as to inferences from general principles. The course is supplemented by detailed study of the physical basis of practical machinery during the first term of the Junior year.

**ASTRONOMY.**—General Astronomy is taught during the second term to all the members of the Junior class. The object of this study is to acquaint the student with the leading facts and discoveries of the new Astronomy, and to present the methods and principles of modern astronomical research. The daily recitations are supplemented by lectures illustrated by photographic lantern views obtained from the principal observatories of the world.

**MINERALOGY** is taught in the second term of the Junior year. A text-book is used, but lectures are also given at each session, illustrated by specimens taken not only from the College collection, but also from the private collection of the Professor in charge.

**GEOLOGY.**—In the study of Geology, which occupies two terms of the Senior year, a text-book is used, but each lesson is explained in advance by a short lecture, at which time suitable specimens are exhibited.

#### **MATHEMATICS.**

During the first year all students of the Scientific School are instructed in Algebra, Trigonometry, Surveying and Draughting. Algebra is completed and the students receive field practice in Surveying sufficient to make them familiar with the uses of the compass and transit and able to determine magnetic variations.

At the beginning of the second year the student elects the course he will pursue for the remainder of his College course, and the mathematics included is applicable to such course and will be mentioned in detail under the heading of those courses.

#### **GRAPHICS.**

The instruction in this department is oral and by illustration or supervision, except in Descriptive Geometry. In this subject a text-book is used in the recitation-room, while the principles there discussed are more fully illustrated by problems assigned for graphical solution in the draughting-room. When the student has acquired some facility in the use of instruments, he is taught the methods of Projections, Intersections and developments of simple geometrical surfaces. In the Sophomore year, the course in Drawing is based on Descriptive Geometry. Besides the solution of problems in Solid Geometry, the course, during the year, includes practice in Shades and Shadows



and Linear Perspective, the work being all directed by mathematical principles.

During the Junior and Senior years, the aim of the instruction is to acquaint the student with some of the many applications of the principles of Drawing bearing especially on those subjects which are applicable in the course which he has elected, much stress being laid on the applications of graphical statics. The design is to prepare intelligent and ready draughtsmen, familiar with fundamental principles and methods; to give the student a safe beginning on which to grow more easily and surely into the work of the practical designer.

#### MODERN LANGUAGES.

ENGLISH.—In the department of English the students are required in the second and third terms of the Freshman year to study the history of the English language; the history of English literature and selections of English prose and poetry; and throughout the Sophomore year, to write essays in literary criticism which call for the careful study of the best authors. This is supplemented in the Freshman year by a systematic course of private reading prescribed for examination. The instruction is given through text-books, lectures, and class papers, in recitations, researches and essays. The course aims to create a love for literature, train the student in the interpretation and critical study of it, and impart so much of the literature itself as will enrich his mind with the best thought and his speech with the most expressive diction of our mother tongue.

**RHETORIC.**—In the department of Rhetoric, begun during the Freshman year, an effort is made to teach the principles of Composition, not as laid down in mechanical rules, but as springing from psychological laws and relations. Ideas presented in accordance with various mental requirements and influences are shown to contain the true philosophy of rational and effective discourse.

Illustrative references to the Masterpieces of Oratory, and to other forms of the best English Classical Literature, are freely given. Essays are required throughout the entire course.

**ELOCUTION.**—The aim is to develop effective delivery in forms of expression. The scope of instruction embraces Physical Culture, Respiration, a Training of the Voice and a cultivation of the powers by which thought is analyzed and presented in synthetic expression.

**EXTEMPORE SPEAKING.**—The Bussing Prizes for excellence in extempore speaking, recently founded, are designed to cultivate the habit of presenting clearly, forcibly and accurately, and in a manner to convince an audience, the facts and ideas a student has upon themes with which he may fairly be supposed to be somewhat conversant. The repeated competition for these prizes during the four years of the College course has already produced excellent effects.

**FRENCH.**—French is taught five hours a week throughout the Freshman year as a required study. An accurate pronunciation is insisted on, and a knowledge of French

grammar. In the second term a large amount of easy prose is read. In the third term the selections offer greater difficulties, and the literary form is studied as well as the language itself. The required course is intended to give to all a practical acquaintance with the language, wide enough to enable them to read ordinary French prose at sight.

**GERMAN.**—German is taught three hours a week during the first term, and four hours a week during the second and third terms of the Sophomore year, as a required subject. During the first term, the grammar is the main object of study, with constant practice in the translation of illustrative sentences, both from German into English and from English into German. In the second term easy German prose is read, both in set lessons and at sight, and in the third, selections from scientific works, that the thought and idioms of scientific writers in German may become familiar to the student. It is the aim of the required course in German to give all the students a competent knowledge of the grammar, and a sufficiently large vocabulary to be able to read ordinary prose, and to pursue further study by themselves with ease.

**POLITICAL SCIENCE AND HISTORY.**

**CIVICS.**—The President meets the Freshman Class during the first term one hour each week for instruction in the rights and duties of the citizen.

**POLITICAL ECONOMY, CONSTITUTIONAL LAW, INTERNATIONAL LAW.**—The President meets the Senior Class of the Scientific School four hours each week during the year for instruction in these branches. See page 46.

**HISTORY.**—For students in the Scientific School the study of History is begun in the Junior year with the use of a text-book as a guide. The course embraces a study of European history from the fall of the Empire to the outbreak of the French Revolution.

The method of instruction is to some extent topical, and aims to furnish information essential to good citizenship, to cultivate a habit of investigation and to teach the student how to come to independent conclusions. Students are encouraged to use the library, are given direction in methods of historical work and are taught the value of historical sources.

#### PHILOSOPHY AND LOGIC.

**PHILOSOPHY.**—The Juniors are required to prepare two recitations a week in Hill's Elements of Psychology during the first term. Fowler's and Jevons' Logics will be studied during the second term. Special courses in Philosophy will be given in Porter's Treatise on the Human Mind, Schwegler's History of Philosophy, Windelband's History of Philosophy, Fowler's and Ueberweg's Logics.

**ETHICS.**—In the third term both sections of the Senior Class pursue the study of Practical Ethics.

## MILITARY DEPARTMENT.

This department is in charge of the Professor of Military Science and Tactics, an officer of the regular army, detailed by the War Department for the purpose.

Instruction is both practical and theoretical.

**PRACTICAL.**—The student, on entering College, is drilled in the School of the Soldier, including bayonet exercise, and is advanced, successively, to the Schools of the Company and Battalion.

Considerable attention is given to target practice, the College being supplied with latest-model Springfield rifles and a liberal supply of rifle ammunition.

**THEORETICAL.**—During the Junior and Senior years, elementary instruction, by means of lectures and recitations, is given in the Art and Science of War, Modern Tactics, Modern Small Arms and Cannon, Explosives, Military Correspondence and Reports, Care of Troops in the Field, Military and Martial Law, and other military subjects.

**UNIFORM.**—A uniform, consisting of cap, blouse and trousers of dark-blue cloth, has been adopted, the cost of which is about \$14, or considerably less than that of a good suit of civilian's clothes. The entire suit is neat and serviceable, and, while required to be worn at drills, may be worn on any occasion.

**MILITARY DRILL** is required of all students in the Scientific School, except as they may be excused by reason of

conscientious scruples, physical disability or some similarly valid reason.

In the Gymnasium, a drill-room and armory have been provided for purposes of military instruction.

The object of instruction in this department is not only to comply with the requirements of the laws of Congress for the State Colleges organized under the Act of July 2d, 1862, but also to improve the health and physique of students, and to give that elementary military knowledge which every citizen should possess, that he may render intelligent and effective aid to his country or State in case of war or riots.

#### PHYSICAL TRAINING.

Exceptionally fine opportunities for Physical Training are afforded to all students by The Robert F. Ballantine Gymnasium and the Neilson Field, both of which are elsewhere described.

At the beginning of his Freshman year, each student is given a physical examination, conducted upon the same plan as that now in use at the leading colleges, and a complete record made of his physical condition. This examination is repeated from time to time, and thus affords valuable information concerning the growth and development of the individual. At the time of the examination, an anthropometric chart is drawn, showing the relation of the individual to the normal standard in size, strength and symmetry. From the information thus obtained, cards are made out specifying the exercises most suitable for each case.

With the students in the Scientific School, Gymnasium attendance is optional. Classes are formed to suit the general convenience and a progressive course of instruction followed.

During the Winter term a class is formed from the two higher classes for instruction in fencing with foils and single-sticks.

Swimming is regularly taught during the Spring term.

#### OPTIONAL STUDIES.

The members of the Senior Class in the Scientific School may attend the lectures upon the Fine Arts and upon the History and Art of Teaching, which are delivered each year before the Senior Class in the Classical School. See pages 49 and 50.

In addition to the maintenance of a satisfactory standing in their prescribed and elective studies, regular attendance upon the lectures and upon the examinations in optional subjects is required.

#### ELECTIVE COURSES.

##### COURSE IN AGRICULTURE.

The object of this course is to provide a broad scientific training, which is now recognized as essential to the best life on the farm.

The major studies of this course include Applied Agriculture, Biology, Botany and Entomology.

**AGRICULTURE.**—The study of the principles of scientific agriculture and their application to the different lines of

farm practice, is continued throughout both the Junior and Senior years. The elements contained in the atmosphere and soil being the basis of all vegetable and animal life, the student is instructed in the transformations which take place in these elements in the production of farm products, in the growth and improvement of farm animals, and in the principles which govern their conversion into products of the highest economic value.

While suitable text-books are used, the instruction, in both the principles and their application, is imparted mainly by lectures.

**ANIMAL BIOLOGY.**—In the Freshman year the students in Agriculture pursue Zoology two hours a week, the second term, reciting with the other students of the Scientific School.

In the Junior and Senior years, Fall and Winter terms, students in Agriculture pursue General Biology, as follows: General Biology of Plants, first half Fall term, Junior year; General Biology of Animals, second half of same term; Invertebrate Zoology, Winter term.

Vertebrate Zoology and Comparative Embryology, in the Fall term, Senior year; Comparative Anatomy of the Domesticated Animals and Economic Zoology in the Winter term.

For further details see the fuller description of these courses under the Course in Biology. While students in Agriculture devote less time to biological subjects than is required of regular students in Biology, with whom they meet, the portions of the work to which they give atten-



tion are chosen with especial reference to their needs. The study of the anatomy of domestic animals is furthered by demonstrations from a fine Auzoux model of the horse.

**BOTANY.**—In the second term of the Junior year, the students examine with the compound microscope the minute structure of the leaves, stems, roots, flowers and seeds of various plants. The accompanying class-room exercises consist of recitations upon, and elaborations of, the work pursued in the laboratory.

During the third term the microscopic study of plants is continued, time being taken for making an herbarium of fifty species of flowering plants, named and neatly mounted.

In the second term of the Senior year a course of lectures is given upon vegetable physiology, and laboratory exercises are continued with ferns, mosses, lichens, algæ, etc. During the third term special attention is given to the various kinds of parasitic fungi, including rusts, mildews, moulds and blights so destructive to crops.

**ENTOMOLOGY.**—The course in this subject begins in the third term of the Junior year and is continued in the first and third terms of the Senior year. Smith's "Economic Entomology" is used as a text-book and during the first term the student will be made acquainted with those structures and physiological peculiarities which are essential to a proper understanding of the problems of economic entomology. The aim is to give as thorough a knowledge as possible of the foundations of the science, that the student may be able to build upon it afterward without further assistance.

In the Senior year the classification of insects will be considered, and the orders will be taken up in turn; the chief injurious forms in each serving as types. Throughout the course, laboratory work will be required, and in this specimens will be studied, so selected as to give the student a comprehensive idea of the variations to be found in this class of the animal kingdom. In the course of the last term the subject of insecticides and insecticide machinery will be taken up, and suggestions as to the practical work in controlling insect pests will be chiefly considered.

For students of Agriculture, not candidates for a degree, provision has been made for College instruction by means of the College Extension system, and in a winter lecture course of six weeks at the College.

#### COURSE IN CIVIL ENGINEERING AND MECHANICS.

During the last three years, the students in this course are instructed in Descriptive Geometry, Analytic Geometry, Railroad Curves, Differential and Integral Calculus, Analytic Mechanics, Hydromechanics, Civil Engineering, Bridge-Building and Geodesy, and have practice two afternoons a week in Draughting, with Exercises and Problems in Geometrical Constructions, in Descriptive Geometry, Topographical, Mechanical and Architectural Drawing and in Graphical Statics.

These subjects, with the exception of Geodesy, are taught by means of text-books, supplemented with numerous practical examples in Descriptive Geometry, Analytic Geometry, Railroad Curves, Differential and Integral Cal-

culus, Statics, Kinematics and Kinetics, Hydrostatics and Hydrokinetics, Roofs and Bridges. Geodesy is taught by means of lectures, including many practical examples from the United States Coast and Geodetic Survey, which the student is required to work out. He is taught how to measure base-lines and reduce them to the sea-level, how to measure angles and adjust them by the method of least squares, and how to compute latitudes, longitudes and azimuths from the field notes. The object of this course is to ground the student well in mathematics, and to give him a substantial knowledge of the theory of civil engineering.

#### COURSE IN CHEMISTRY.

During the last three years, students in this course are instructed in General, Experimental and Agricultural Chemistry, Crystallography, Blowpipe Analysis, Descriptive and Determinative Mineralogy, Analytical, Organic, Applied and Theoretical Chemistry.

The course of study depends, to some extent, upon the student's future pursuit in life.

**EXPERIMENTAL CHEMISTRY** is taught in the recitation-room by carefully-conducted quizzes and full work in the laboratory. The student's first and general knowledge of chemistry is obtained by his own observation.

**BLOWPIPE ANALYSIS** comprises the study of the various reactions and the analysis of a number of substances. Laboratory work is accompanied with constant quizzing in the recitation-room.

**GENERAL CHEMISTRY** is taught from a text-book, fully illustrated by experimental lectures, during two terms of the Sophomore year.

**ORGANIC CHEMISTRY** begins in the third term of Sophomore year.

In the first and second terms of Junior year the subject is continued by those in the Chemical Course only. The student is constantly questioned and expected to show a thorough knowledge of all principles developed in the text-book. He also is given imaginary problems and taught how to plan an investigation with carbon compounds, thereby gaining a theoretical knowledge of the methods of research in this subject. Laboratory work follows in the Senior year.

**ANALYTICAL CHEMISTRY.**—The student commences with experiments on bodies of known composition, performing those experiments that characterize common, simple substances, until he is perfectly familiar with the reactions, both theoretically and experimentally, the theoretical part being considered in the class-room. Then complicated bodies are examined, until most difficult substances are readily analyzed.

**QUANTITATIVE ANALYSIS** is taught in a similar way. The student first analyzes substances of known composition until perfectly familiar with the peculiar manipulation in this subject. Then he proceeds to substances of unknown composition. Through one College year, instruction is given, with recitations and questionings during the first term.

**STOICHIOMETRY** is taught by lecture, recitation and blackboard drill.

**APPLIED CHEMISTRY.**—The application of Chemistry to the arts and manufactures is taught by lectures and textbook. Whenever it is practicable, the actual products are exhibited to the students, and the manufacturing processes reproduced in miniature. Attention is drawn to the scientific relations and connections between the various manufactures. The great losses by imperfect methods of manufacture and by waste products are pointed out, and the student is taught to see the true economy of production. Illustrative of the lectures, visits are made to various manufacturing establishments, of which there are a number in and about New Brunswick, and an opportunity is given to see manufacturing operations in actual working.

**PRINCIPLES AND THEORIES** of Chemistry, having recently developed in a very remarkable way, form a most important branch of Chemistry. Accordingly, the subject extends throughout the Senior year.

**THESIS.**—After finishing experimental organic chemistry, the student takes up work for his thesis chosen by him, but subject to the approval of the instructor.

**MINERALOGY** is taught in the Junior year. In the second term there is a course in Descriptive Mineralogy, in which the general characters of minerals are discussed, and some of the most important species are carefully studied. Special attention is paid to **CRYSTALLOGRAPHY**, as being one of the most distinguishing characteristics, and therefore much used

in Determinative Mineralogy, which occupies the third term. In this part of the course the student learns to make the tests by which minerals are distinguished from each other, and becomes familiar with their differences by actual handling and comparison. In this course use is made of the College collections, supplemented by the private collection of the Professor in charge.

GEOLOGY is studied in the first and second terms of the Senior year. A text-book is used, but each lesson is explained in advance and fully illustrated by the use of specimens, with which the College is abundantly supplied.

#### COURSE IN ELECTRICITY.

This course is similar to that in Engineering, Electrical subjects being substituted for Railroad Curves, Bridge-Building, Geodesy and Hydromechanics.

Its object is to prepare for post-graduate courses at technical institutions, or for electrical pursuits which do not demand, at the outset, a complete professional training.

The laboratory is provided with engines, dynamos, motors, and other apparatus needed for all sorts of measurement and testing.

Work in the laboratory is required throughout the Junior and Senior years, and consists of a course of experiments designed to familiarize the students with measuring apparatus while training them in careful quantitative operations. The Senior year is occupied in management and testing of electrical machinery, and it is customary to visit electric light and power plants to study industrial practice on its actual scale.

## COURSE IN BIOLOGY.

While this course is introductory to medical and special biological studies, it is adapted to the purposes of a general education. Scientific and Classical students electing this course, and also Agricultural students, divide the time nearly equally between three departments (Zoology, Botany, Entomology) during the Junior and Senior years, according to the following

## SCHEDULE FOR ELECTIVE BIOLOGY.

	JUNIOR YEAR.		SENIOR YEAR.	
First term .... {	General Biology of Lower Cryptogams.	General Biology of Lower Invertebrates.	Systematic Entomology.	Anatomy of Lower Vertebrates.
Second term.. {	Vegetable Histology.	Zoology of Higher Invertebrates.	Vegetable Physiology.	Anatomy and Histology of Domestic Animals.
Third term ... {	Vegetable Histology.	Anatomy and Physiology of Insects.	Vegetable Pathology.	Systematic and Economic Entomology.

In the Freshman year, second term, two hours a week are required of all students. Orton's Zoology is used as a text-book, supplemented by lectures and demonstrations.

The elective work is mainly in the laboratory and is pursued by means of microscope and scalpel. The student sketches and describes the objects studied. Supplementary lectures are given. Each student provides himself with Parker's "Lessons in Elementary Biology" and Packard's "Zoology" (advanced course) for the quiz work; for the laboratory, Dodge's Biology and a small case of instruments.

**BOTANY.**—Laboratory study in Botany begins in the second term of the Junior year, and students then pursue a course in vegetable anatomy with the compound microscope, in which they are introduced to the various kinds of tissues and tissue systems as illustrated in the leaves, stems and roots of the higher plants. In the third term, laboratory practice is continued with the histology of the organs of reproduction, and the collecting of plants in the field begun. Each student prepares an herbarium of at least fifty species, all neatly mounted and fully labeled.

The Seniors, in their second term, have a course of lectures upon Vegetable Physiology, special attention being paid to the origin of varieties through cross-fertilization and other causes. In the laboratory, each member of the class becomes familiar, microscopically, with the histology of cryptogams, particularly those best enforcing the principles in Physiology considered in the class-room. The third term is specially devoted to a consideration of those low organisms that are so obscurely known under the general term of the fungous diseases of plants, and embracing one branch of economic Botany, now called Vegetable Pathology.

**ENTOMOLOGY.**—This will be taught for three terms, beginning in the third term of the Junior year and continuing during the first and third terms of the Senior year. During the first term the anatomy and physiology of insects will be studied, largely from the specimens themselves in laboratory work, and partly by the assistance of Auzoux models. The students are required to make dissections and careful descriptions of the specimens studied, that they



may have, from actual observation, a good knowledge of insect structure, the basis upon which all future thorough study must rest. The outline of classification will follow, in which the orders are taken up separately, leading types of each being selected for purposes of study. Especial attention will be paid to the morphological and biological side of the science.

In the last term of the Senior year the students will be required to prepare and arrange collections in part made by themselves. A very full collection of insects of the United States, including the principal injurious forms, is at hand for the purpose of comparison and study. The aim is to give such a knowledge of the subject as a whole as will enable the student to specialize without further assistance, should he desire to continue the study at the conclusion of the course. Smith's "Economic Entomology" will be used as a text-book.

#### EXTENSION DEPARTMENT.

The work of the Extension Department has, during the past five years, become familiar in most of the larger towns of the State, and also in many agricultural communities. It is conducted in strict accordance with the methods of "University Extension." A course of lecture-studies consists of the following elements:

- (a) A series of lectures.
- (b) A printed syllabus.
- (c) A class-hour, or hour of conference following each lecture.
- (d) Written exercises by members of the class.
- (e) An examination open to those who have taken the whole course.
- (f) Appropriate credits issued to successful students.

Every part of the work is voluntary. Many simply attend the lectures and do not enroll themselves as students, but all are encouraged to take the full course, since a far better knowledge of the subject can thus be obtained. All courses consist of twelve lecture-studies unless otherwise specified. For the season of 1896-97 the following courses are offered :

#### AGRICULTURE.

SOILS AND CROPS, (6).	By Professor Edward B. Voorhees, A.M.
THE FOOD OF PLANTS, (6).	By Professor Edward B. Voorhees, A.M.
ANIMAL NUTRITION, (6).	By Professor Edward B. Voorhees, A.M.
AGRICULTURAL BOTANY, (in two parts, each 6).	By Professor Byron D. Halsted, Sc.D.
ECONOMIC ENTOMOLOGY, (in two parts, each 6).	By Professor John B. Smith, Sc.D.
APPLICATION OF THE PRINCIPLES OF PHYSICS, (6).	By Professor F. C. Van Dyck, Ph.D.
CONSTRUCTION OF ROADS, BRIDGES AND DRAINS, (6).	By Professor A. A. Titsworth, M.S., C.E.
GEOLOGY, (6).	By Professor Frank L. Nason, A.M.

#### THE FINE ARTS.

GREEK, HELLENISTIC AND ROMAN ART.	By Professor Edgar S. Shumway, Ph.D.
OLD ITALIAN AND MODERN FRENCH ART, (13).	By Professor John C. Van Dyke, L.H.D.
HISTORY OF ARCHITECTURE.	By Professor A. D. F. Hamlin, Ph.D.

#### HISTORY AND SOCIAL SCIENCE.

THE BEGINNINGS OF MODERN HISTORY.	By Professor E. L. Stevenson, Ph.D.
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- THE FRENCH REVOLUTION. By Professor E. L. Stevenson, Ph.D.
- THE FORMATION AND ESTABLISHMENT OF THE UNITED STATES AS A NATION. By Professor E. L. Stevenson, Ph.D.
- THE EASTERN QUESTION. By Professor James F. Riggs, D.D.
- VITAL FORCES IN MODERN HISTORY, (6). By Professor James F. Riggs, D.D.
- THE PROTESTANT REFORMATION, (6). By Professor James F. Riggs, D.D.
- SOCIOLOGY. By Reverend George Hubbard Payson, A.M.

## LITERATURE.

- THE ENGLISH BIBLE, (6). By Professor William Rankin Duryee, D.D.
- SOME REPRESENTATIVE NAMES IN ENGLISH LITERATURE. By Professor A. V. Williams Jackson, Ph.D., L.H.D.
- SHAKESPEARE AND THE ENGLISH DRAMA. By Professor A. V. Williams Jackson, Ph.D., L.H.D.
- SHAKESPEARE. By Homer B. Sprague, Ph.D.
- A CENTURY OF ENGLISH POETRY. By Professor T. M. Parrott, Ph.D.
- SIX AMERICAN POETS, (6). By Professor Louis Bevier, Jr., Ph.D.
- MODERN FRENCH LYRIC POETRY, (6). By Edwin B. Davis, B.L.
- FOUR LATIN HISTORIANS, (6). By Professor Edgar S. Shumway, Ph.D.
- THE GREEK DRAMA. By Professor Louis Bevier, Jr., Ph.D.
- HOMER AND THE GREEK EPOS, (6). By Professor Louis Bevier, Jr., Ph.D.

## PHILOSOPHY AND PEDAGOGY.

- THE WORLD'S GREAT THINKERS. By Professor Jacob Cooper, D.D., D.C.L.
- HOW WE KNOW. By Reverend John B. Thompson, D.D.
- EDUCATIONAL EPOCHS. By Professor Elliot R. Payson, Ph.D.

## SCIENCE.

ASTRONOMY.	By Professor Robert W. Prentiss, M.S.
BOTANY.	By Professor Byron D. Halsted, Sc.D.
CHEMISTRY.	By Professor P. T. Austen, Ph.D., F.C.S.
ELECTRICITY.	By Professor F. C. Van Dyck, Ph.D.
ENTOMOLOGY.	By Professor John B. Smith, Sc.D.
GEOLOGY.	By Professor Frank L. Nason, A.M.
MINERALOGY.	By Professor Albert H. Chester, E.M., Ph.D., Sc.D.
PHYSIOLOGY.	By Professor Julius Nelson, Ph.D.
ZOOLOGY.	By Professor Julius Nelson, Ph.D.

The cost of courses other than the Agricultural courses to any organization in the State constituting itself an Extension Centre averages about \$20 a lecture-study, but those requiring illustration with the lantern or by means of experiments are somewhat more expensive. Details will be given on application. This charge entitles a centre to the entire course and to 75 copies of the syllabus. No bill of extras will be rendered. If more than 75 copies of the syllabus are required they may be had at 10 cents a copy. These are the charges for the work under all heads except that of Agriculture. For the courses in Agriculture the price has been set at \$10 a lecture-study. This is only possible through the generosity of friends of the late Dr. George H. Cook, who purpose to develop thus the work begun by him for the benefit of the farmers of New Jersey.

All inquiries should be sent to Louis Bevier, Jr., the Secretary of the Extension Department.

THE NEW JERSEY STATE AGRICULTURAL COLLEGE  
EXPERIMENT STATION.

By the Act of Congress of March 2d, 1887, a law was passed entitled "An act to establish Agricultural Experiment Stations in connection with the Colleges established in the several States under the provisions of an act approved July 2d, 1862, and of the acts supplementary thereto." This act is commonly known as the "Hatch Act," from the active interest taken in its passage by Hon. William H. Hatch, M.C., of Missouri. It authorizes the appropriation of \$15,000 annually for the support of Agricultural Experiment Stations in connection with the Colleges which were established in the several States "for the benefit of Agriculture and the Mechanic Arts," by the Act of Congress of July 2d, 1862.

The Legislature of New Jersey, by its acts of March 16th, 1887, and of March 5th, 1888, designated the Trustees of Rutgers College "as the parties to whom all moneys appropriated by Congress under said acts of Congress or supplements thereto shall be paid for the purposes mentioned in said acts of Congress." The department of Rutgers College known as Rutgers Scientific School is, by law, the State Agricultural College. The Agricultural Experiment Station is established in connection with it.

## GENERAL INFORMATION.

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### EXAMINATIONS.

The classes in both Schools are examined at the close of each term. These examinations are partly oral and partly written, and have an important bearing upon the standing of the student in his class.

Unexpected examinations at irregular intervals are held at the discretion of each instructor. The object of these examinations is to cultivate the habit of considering the relations of each day's work to what has been done before, and to stimulate effort on the part of each student to gain a comprehensive knowledge of the subjects studied.

At the end of the first and third terms, the examinations of the classes of the Scientific School are held in the presence of the Board of Visitors, who then make their semi-annual visits to the institution.

At the end of the third term, each member of the Graduating Class of the Scientific School is required to present a thesis on some scientific subject, a copy of which is written out upon paper suitable for binding and deposited in the College Library.

The final examination of the Graduating Classes is held four weeks before Commencement, from which time they are subject to such duties as are required for their preparation for Commencement.

Students who receive conditions at the June Examina-

tions must report at College prepared to be examined upon the whole of each of the subjects on which they have conditions, at 10 A. M. on the Tuesday before College opens, in September.

#### GRADUATION.

To all members of the Graduating Class of the Classical School, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Arts.

To all members of the Graduating Class of the Scientific School, in full standing, the Trustees grant diplomas conferring the Academic degree of Bachelor of Science.

To students, in either School, who have satisfactorily pursued special courses of study, a certificate is granted stating the studies pursued and the attainments made.

#### CLASS HONORS.

The following regulations have been adopted by the Board of Trustees regarding the graduating exercises at Commencement :

1. There shall be three scholarship honors in each section of the Graduating Class, awarded to those students who shall stand first, second and third respectively, in all the required studies of the Classical or Scientific curriculum, provided that in each individual case the student so standing shall rank among the first four in the major subject or subjects of his elective course. A failure on the part of any candidate to fulfill this condition will render the student standing next in grade of general scholarship

eligible, subject to the same condition regarding the elective course.

2. There shall be no distinction by way of comparison between the scholarship honors of the Classical School and those of the Scientific School.

3. The three scholarship honors of each School shall be designated as follows :

CLASSICAL SCHOOL.

First Honor—Philosophical Oration.

Second Honor.

Third Honor.

SCIENTIFIC SCHOOL.

First Honor—Scientific Oration.

Second Honor.

Third Honor.

4. An oration to be known as the Rhetorical Honor shall be awarded to that member of either section of the class of those ranking in general grade of scholarship among the first half of his class in all the required studies of the Classical or Scientific curriculum, who shall have received the highest grade in Composition and Elocution during the Junior and Senior years.

A student may receive any one of the three Scholarship Honors and the Rhetorical Honor, but he shall deliver only one oration at Commencement.

5. Two other orations shall be awarded as follows: From a list which shall include those students from both sections of the class who stand in the first half in grade of scholarship in all the required studies of the course, and which shall exclude those who have received Scholarship Honors or the Rhetorical Honor, the two students having the highest grade in Composition and Elocution during the Junior and Senior years shall be chosen as orators.



**SPECIAL HONORS.**

Department or Individual Honors may be granted in each elective subject. Of these there are two in each Classical course, and one in each Scientific course. Such an honor will be granted to that student who stands highest in the particular elective subject, on two conditions:

1. Provided that he stand in the first third of the Classical or Scientific Section of his class in the required studies of his course; and,
2. Provided that he be recommended to receive that honor by the Professor or Professors who have instructed him in the elective subject or subjects.

Competition for individual or department honors shall begin where the courses begin to diverge, *i. e.*, with the first term, Junior year, in the Classical School, and with the first term, Sophomore year, in the Scientific School.

**DEGREES AND POST-GRADUATE STUDIES.**

The Faculty will recommend for the degree of Master of Arts or Master of Science candidates otherwise properly qualified, who, after taking the appropriate Bachelor's degree—

1. Shall pursue for at least one year at Rutgers College a course of liberal and non-professional study, approved by the Faculty, and shall, beside the term examinations, pass a thorough examination on that course and present a thesis on some topic connected with it; or,
2. Who, not less than three years after taking the Bach-

elior's degree in Rutgers College, shall make application for the Master's degree, presenting at the same time a certificate of graduation from a Theological Seminary, a Law School or a Medical School, or of admission to the practice of Law or Medicine; or,

3. Satisfactory evidence by thesis or otherwise of successful labor in education or literature pursued during three consecutive years and of advanced studies prosecuted; or,

4. In case of Bachelor of Science, satisfactory evidence of successful professional work actually done and advanced professional studies prosecuted.

The degrees of Ph.D. and Sc.D. may be conferred upon resident graduates of the College who shall pursue for two years prescribed courses of study under the direction of the Faculty.

- The conditions will be made known on application.

The degree of Civil Engineer is a professional one, and is, on application, conferred upon graduates of the College who have taken the degree of Bachelor of Science, and subsequently have passed three years in the practice and study of engineering, with results satisfactory to the Faculty.

The applicant is required to furnish a statement of the work upon which he has been engaged, and to present a thesis or discussion of some engineering work which he has done. The application and thesis must be presented to the Secretary of the Faculty at least one month before Commencement.

The degree of Bachelor of Divinity (B.D.) will be con-

ferred on students graduating from the Theological Seminary in New Brunswick, who shall present certificates from the Faculty of the Seminary showing that they have done the special work and successfully passed the special examinations prescribed for that degree.

#### REGULATIONS.

Morning prayers are attended in the College Chapel each morning, except Saturday and Sunday, at 8:40 o'clock.

A Bible Class, attendance at which is voluntary, is held Sunday morning in the College Chapel at 10 o'clock.

A sermon is preached every Sunday morning in the College Chapel at 11 o'clock. Students are required to be present.

They are expected, also, to attend public worship in the afternoon or evening, at such place as their parents or guardians may direct.

No student is allowed to leave the city during term time without permission from the President or the Registrar.

Excuses for absence from all College duties must be obtained from the Registrar.

Unexcused absences are reported to the Faculty; and a student is not allowed to make up the recitations omitted, but receives zero as a mark.

Recitations, except in Elective subjects, are marked on a scale of 100, and the average standing of each student is made up at the end of each term, and sent to his parent or guardian. A mark at examination counts as much as one-third of the term's work up to the time of examination.

If the grade for the term's work previous to the exami-

nation, in any subject, fall below 60 per centum of the maximum, the student will be conditioned in that subject.

If the grade of any student in any study at any time fall below 60 per centum of the maximum, his case will be acted on as the Faculty shall deem necessary.

If any student's average grade in any term fall below 60 per centum of the maximum, he will lose his standing in his class, and be required to fall back a year in the course, unless all his deficiencies shall be removed before the opening of the next term.

In Elective courses the only official statement of work done is the announcement, at the end of each term, in each student's report, that he has "passed," or "passed with honor," or "failed." The marks given in elective work are not made public, and do not enter into the ordinary computation of grade. They serve only for the guidance of the Professors concerned and of the Faculty in determining the Scholarship honors at graduation.

If any student shall be found notably deficient in his daily recitations, or at the examination in any of his studies, his case will be reported to the Faculty, and such action by way of discipline will be taken as may be deemed necessary.

No student can be promoted to an advanced class until all his deficiencies are made up; and if he fail to make up all his deficiencies before the opening of the College year, he will cease to be a member of his class. Examinations for making up such deficiencies are held at 10 A. M. on the Tuesday before the opening of the Session in September.

The Faculty are empowered to pass such regulations relative to the number of boarders in each house as they think proper; and students shall board only at such places as are approved by them.

## COLLEGE EXPENSES.

CLASSICAL SCHOOL		One Term.	One Year.
Tuition,		\$25 00	\$75 00
Public Room Service (Gymnasium, \$6.00; Library, \$3.00; Janitor and Fuel, \$15.00),		8 00	24 00
Elective Course in Biology, extra,		5 00	15 00
Elective Course in Chemistry, extra,		5 00	15 00
Elective Course in Physics, extra,		5 00	15 00
Elective Course in Astronomy, extra,		5 00	15 00
Admission Fee,			5 00
Graduation Fee, payable before Senior Final Examinations,			7 00
Certificate Fee, payable after a special or partial course,			5 00

SCIENTIFIC SCHOOL			
Tuition,		\$25 00	\$75 00
Public Room Service (Gymnasium, \$6.00; Library, \$3.00; Janitor and Fuel, \$15.00),		8 00	24 00
Draughting-Room Fee, extra after Freshman year,		5 00	15 00
Electrical Laboratory Fee, extra,		5 00	15 00
Chemical Laboratory Fee, extra,		10 00	30 00
Biological Laboratory Fee, extra,		5 00	15 00
Admission Fee,			5 00
Graduation Fee, payable before Senior Final Examinations,			7 00
Certificate Fee, payable after a special or partial course,			5 00

All College bills are payable within ten days after the beginning of each term. All checks should be made payable to the Treasurer of Rutgers College.

For information in regard to rooms and board in Winants Hall, see subsequent pages.

Students in the Scientific Courses are required to procure sets of draughting instruments, costing from \$10 to \$20. They are advised to defer the purchase of these instruments until entering College, as they will then have the advantage of procuring them under the direction of the Professor of Draughting.

Students pursuing the Course in Chemistry and the Course in Electricity are expected to provide themselves, at their own expense, with the necessary sets and pieces of apparatus, which may be obtained from the regular apparatus dealers, or from the Laboratory Supplies department. These sets are retained through the year, but at the end of it, if the owners do not wish to keep them, they will be purchased at a fair price. If proper care has been exercised, a small discount only (about 10 per cent.) from the original cost will be made, All breakage and damage to College apparatus will be charged in full.

#### BENEFICIARY AID.

A student who is preparing for the ministry of the Reformed Church in America and who needs pecuniary assistance, may be placed on one of the Beneficiary Funds which the Trustees hold in trust for the purpose ; *provided*, that he engage to pursue his studies uninterruptedly until he shall have completed his theological course in one of the theological schools under the care of the General Synod of the Reformed Church in America, in accordance with the requirements of that Church, Art. 2, Sec. 2.

All who are placed on these funds receive \$150 annually.

**VAN BENSCHOOTEN FUND.**—This fund, the gift of the Rev. ELIAS VAN BENSCHOOTEN, in 1814, amounting to \$20,813, was given in trust jointly to the General Synod of the Reformed Church and the Trustees of Rutgers College, to aid in the education of indigent students for the ministry. The students who enjoy the benefits of this fund are appointed by the Trustees of the College on the nomination of the General Synod of the Reformed Church.

**KNOX FUND.**—This fund, consisting of \$2,000, was given by Mrs. REBECCA KNOX, of Philadelphia, in 1815, to the Trustees of Rutgers College, the income from it to be expended for the support of one student in the Theological Seminary.

**W. H. SMOCK FUND.**—WILLIAM H. SMOCK, of Marlboro, N. J., left by his will, to the Trustees of Rutgers College, the sum of \$500, to be invested as a fund, the interest of which should be used to aid in the education of young men for the ministry. This legacy was received in 1859, and has been duly employed since that time for the purpose named.

**MANDEVILLE FUND.**—In 1865, the Trustees of Rutgers College received from the executor of the will of WILLIAM MANDEVILLE, of New York City, the sum of \$2,000, to be invested and the income thereof to be applied to the support of a theological student in the College.

**VOORHEES FUND.**—ABRAHAM VOORHEES, of Franklin Park, N. J., bequeathed by his will \$26,000 to the Trustees

of Rutgers College, the income of which is to be expended in aiding worthy young men who are candidates for the ministry, while pursuing their studies in Rutgers College.

**BROWNLEE MEMORIAL FUND.**—This fund consists of \$2,000, the income of which is to be used for purposes of ministerial education. It was given in 1891 by Mrs. WILLIAM A. BLOODGOOD, of New York, in memory of her father, the late Rev. WILLIAM C. BROWNLEE, D.D., who was at one time Professor of Languages in the College, and afterwards for many years an active and efficient Trustee.

**BOARD OF EDUCATION.**—The Board of Education of the Reformed Church grants aid to young men preparing for the ministry in the denomination. The conditions are that the persons receiving aid shall have been members of some Evangelical Church one year, and at the time members of some Reformed Church. The aid may be obtained either while in College or in the Theological Seminary.

At present the amount given is \$150 per annum. Information may be had by addressing the Secretary of the Board, 25 East 22d street, New York City.

**ROOMS FOR STUDENTS.**—Such rooms in Peter Hertzog Hall as may not be required for the use of the students in the Theological Seminary, are allowed to be occupied by the students of the College who have the ministry in view, and on the same conditions as the members of the Theological Seminary, *i. e.*, free of charge.



## PRIZES.

In every case where it is expected that a prize will be awarded for work done, it is distinctly announced that unless in the opinion of the examiners the work submitted is of such excellence as to merit a prize or prizes, no prize will be awarded.

Whenever a prize requires both an essay and an examination, the essay must be handed in before the hour fixed for the examination.

All prizes are open equally to members of the Classical and Scientific Schools, except in cases where they are specially limited to one school by the donor. Each competitor for a prize must sign a written declaration that the essay or other work offered by him is his original and unaided work. The essays are to be written on a paper of a prescribed kind, and the successful essay is to be deposited in the College Library, before the writer is entitled to the prize.

**SUYDAM PRIZE FOR COMPOSITION.**—This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall write the best English Composition. Competitors must hand in their compositions on or before April 20th Subject for 1897: "The Poems of William Watson."

**SUYDAM PRIZE IN NATURAL SCIENCE.**—This prize, the gift of JAMES SUYDAM, Esq., is a gold medal of the value of twenty-five dollars, or that sum in money, and is to be awarded to the member of the Senior Class who shall have made the greatest attainments in Natural Science. The examination is upon all the subjects of Natural Science in the College course, Astronomy, Biology (including Physiology and Zoology), Botany, Chemistry, Geology, and Physics, and is conducted by the Professors of those subjects. The questions and answers are required to be written.

**BRODHEAD CLASSICAL PRIZE.**—This prize is the gift of Rev. Dr. JACOB BRODHEAD and his son, J. ROMEYN BRODHEAD, LL.D. It is the interest on \$500, *i. e.*, twenty-five dollars, to be given to the best Senior Classical scholar, on the following conditions:

First. "That those who offer themselves as candidates for it shall be subjected to a special examination, at a time to be fixed by the Faculty near the close of the Senior year."

Second. "That the subject of the examination be a passage or play of some classical author (not included in the College programme of studies), to be selected by the Classical Professors, and to be announced at least one month before the time fixed for the examination."

Third. "A subject for an essay shall be announced at the same time, and the essay shall be given in on the day of examination."

Fourth. "Both the examination and the essay shall be taken into account in the adjudication of the prize. A law copy of the essay of the prize-man shall be handed in by him before the medal is put into his hands, to be preserved among the archives of the College."

(a) Text for examination in Latin: Lactant. Div. Institut. Book III., *De Falsa Sapientia*; Book IV., *De Vera Sapientia*.

(b) Subject of essay to be written in Latin, not less than ten (10) thesis pages: "The Debt of Lactantius to Cicero."

**BRADLEY MATHEMATICAL PRIZE.**—This prize was established by the late Hon JOSEPH P. BRADLEY, LL.D., Class of 1836, and is maintained by his son, CHARLES BRADLEY, Esq., of the Class of 1876. It consists of a valuable Mathematical work, which is to be bestowed on the student of the Senior Class who shall present the best solution of a set of Mathematical problems to be proposed to the class by the Professor of Mathematics before the close of the second term.

**MYRON W. SMITH MEMORIAL PRIZES FOR DECLAMATION.**—These prizes were founded by LYNDON A. SMITH, M.D., of Newark, in the name of his son, Adjutant MYRON W. SMITH, who was a graduate of the College in the Class of 1858, and who gave his life in the late war to the cause of his country. They consist of the interest of \$500 (twenty-five dollars), proportionately appropriated to two medals, one of gold and the other of silver, which are to be awarded respectively to the best and second-best speakers of the Sophomore Class. Only those students who shall have pursued, in the College, the regular studies of the Classical or a full Scientific course from the beginning of the Freshman year, shall be allowed to contend for these prizes.

The competition for these medals shall take place before a committee of the Faculty, when the best and second-best speakers shall be selected, to whom the medals shall be awarded, and six others shall receive honorable mention in their order of excellence. The medals shall be presented at Commencement.

**TUNIS QUICK PRIZE.**—This prize, the gift of the late P. V. SPADER, Esq., of New Brunswick, is the income of \$300, at 5 per centum, and is to be presented to that member of the Freshman Class, Classical or Scientific, who shall pass the best examination in Spelling and in English Grammar.

The examination is to be conducted in writing by the Professor of English Literature, at as early a day as convenient in the second College term, and under such regulations as the Faculty may from time to time establish.

The prize may be withheld from any and all papers offered, either for want of merit or for failure of proper competition. In case the prize be not awarded in any year, it is to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prize, are subject to change by the Board of Trustees.

**PETER SPADER PRIZES.**—These prizes, the gift of the late P. V. SPADER, Esq., are two in number, the income of \$400 and \$300, respectively, at 5 per centum, and are to be awarded to those members of the Sophomore Class, Classical or Scientific, who shall present the best essays on some subject in Modern History, selected by the Professor of History, with the approval of the Faculty.

The subject is to be announced at the close of the Freshman year, and the competing essays are to be handed in on or before the last Monday in May of the Sophomore year.

The committee annually appointed by the Faculty may decline to award these prizes, or either of them, for want of merit in the essays, or for failure of proper competition. In case the prizes be not awarded in any year, they are to be offered one year later to the members of the same class, on the same conditions as at first.

All regulations as to time, manner and conditions of awarding the prizes are subject to change by the Board of Trustees.

Subject for 1897: "The Influence of the Quakers in American History."

**APPLETON MEMORIAL PRIZE.**—This prize was founded by a gift of \$500, from the Rev. SAMUEL E. APPLETON, D.D., in the name of his mother, Mrs. ELIZABETH APPLETON. It consists of twenty-five dollars, the interest of the above sum, and will be given "to the member of the Senior Class who shall pass the best examination in Moral Philosophy."

(a) For 1897: Examination upon Professor Bowne's "Principles of Ethics," pp. 124-309.

(b) Subject for essay: "Diversities in Morals."

**BOWSER ENGINEERING THESIS PRIZE.**—A prize consisting of a valuable Engineering work is given by Professor E. A. BOWSER, LL.D., to that member of the Engineering Section of the Senior Scientific Class who shall present the best thesis upon some Engineering subject at graduation.

**JOHN PARKER WINNER MEMORIAL PRIZE.**—This prize consists of twenty-five dollars, given by JOHN WINNER, Jr., and his wife in memory of their deceased son, JOHN PARKER WINNER. It will be open to competition for students in both the Classical and Scientific Sections who are pursuing the study of Mental Philosophy, and will be bestowed on the one who shall pass the best examination on some work assigned by the Professor of Metaphysics.

(a) Work for 1897: Examination upon Janet's "Final Causes," complete.

(b) Subject for essay: "The Industry of Man the only Guide in Estimating the Industry of Nature."

**VAN DOREN PRIZE.**—This prize consists of twenty dollars, the gift of the Rev. WILLIAM H. VAN DOREN, D.D. It is open to competition for members of the Senior and Junior Classes in both sections, and for members of the Theological Seminary.

Subject for 1897, essay limited to 3,000 words: "Progress in the Evangelization of the American Indian."

**JUNIOR EXHIBITION.**—Eight members of the Junior Class in the regular courses are chosen each year, on account of their abilities in Composition and in Elocution, who deliver original speeches at an exhibition held on the Monday evening preceding Commencement. The selection is made by a committee of three persons appointed for that purpose by the Faculty.

A prize of twenty-five dollars, the gift of RALPH N. PERLEE, Esq., of New York City, is awarded by a special committee at the time of the exhibition to that orator who shall be adjudged the best writer and speaker among the contestants.

**SLOAN ENTRANCE EXAMINATION PRIZES.**—See page 17.

**BUSSING PRIZES FOR EXTEMPORE SPEAKING.**—MRS. ANN VAN NEST BUSSING, of New York City, has given to the College \$1,000, the income of which (fifty dollars per annum) is to be expended each year for books, which shall be selected by the President of the College, and given as follows: The First Prize, of thirty dollars, to that member of the Senior Class who shall prove himself to be the best extemporaneous speaker; the Second Prize, twenty dollars, to the second-best extemporaneous speaker of the Senior Class. The prizes are to be awarded by the Faculty of the College, or by a committee whom they shall name, and shall be awarded after a public debate to be held in the latter part of the College year. In awarding the prizes, "strict attention shall be given to logical and forcible presentation of thought, full and accurate information as to matters of fact, and grace and effectiveness in delivery." For the sake of training students in the clear expression of intelligent thought upon matters of public interest, each class has an exercise in extempore speaking twice in each term. The subject is announced to the class, and, after five minutes for thought, the members of the class discuss the subject or debate the question before a committee.

**VAN VECHTEN PRIZE.**—A. V. W. VAN VECHTEN, Esq., of New York City, founded in 1884 (first award Commencement, 1885), in honor of his mother, the late LOUIZA VAN VECHTEN, and his father, Rev. SAMUEL VAN VECHTEN, D.D., a prize of sixty dollars, by the gift of \$1,000, the prize "to be given annually to that student of Rutgers College who shall be adjudged by the Faculty of the Theological Seminary of the Reformed Church of America, at New Brunswick, to have presented an article, original with himself, and the best submitted—the most conclusive and inspiring to strengthen faith in and love for Foreign Missions." The essays are limited to 8,000 words, and are to be presented on or before May 1st of each year.

Subject for 1897: "The Armenians. Their Church, History, and the Missionary Work Done Among Them."

**CLASS OF 1876 POLITICAL PHILOSOPHY PRIZE.**—The Class of 1876 has given to the College one thousand dollars (\$1,000) as the foundation of a Prize Fund (which they express the hope that they may increase from time to time, until it shall be sufficiently large to establish a Fellowship), for the encouragement of the study of Political Philosophy. The income of this fund is to be awarded each year "to that member of the Senior Class (either Classical or Scientific) who shall be adjudged entitled to it, \* \* \* on the basis of an original essay on some subject in Political Philosophy, assigned by the Professor of that science in the College, and upon a competitive examination in a text-book also selected by him;" the committee of award to consist of "three competent persons selected by the Faculty of the College, at least one member of the committee to be a member of the Class of 1876 as long as any may be living."

(a) An examination upon Ingram's "A History of Political Economy."

(b) Subject of essay for 1897: "The Rise and Development of the Idea of Popular Sovereignty."

**BRADLEY PRIZE IN ROMAN LAW.**—This prize was founded by the Hon. JOSEPH P. BRADLEY, LL.D., late Associate Justice of the Supreme Court of the United States, and is maintained by his son, CHARLES BRADLEY, Esq. It consists of a valuable work on Roman Law.

The examination upon text will cover: Justinian Inst., II., Titles 1-8; Justinian, Digest, Book XLI., Title 1; Gaius, Institutes, Book II., §§ 1-96; Ulpian, Lib. Sing. Regularum, XIX.

The subject of the essay for 1897 will be: "Singular Acquisition, Exclusive of Legacies."

The prize may be competed for by Seniors.

**CLASS OF 1866 ELECTRICAL SCIENCE PRIZE.**—The Class of 1866, being the Centennial Class after the grant of the first charter, has established a prize of fifty dollars, to be awarded to that member of each graduating class who

has taken a full course leading to the degree A B. or B.S., including the higher mathematics and physical laboratory practice, and who has shown, in the judgment of the Faculty, the greatest degree of proficiency in the science of Electricity.

A special examination, conducted by an appropriate committee of the Faculty, will be held Saturday, May 15th, 1897, at 2 P. M., to select the recipient of the prize. If, in the opinion of the committee, none of the competitors deserve the prize, it will be withheld.

**DELTA PHI SENIOR ORATOR PRIZE**—A prize of twenty-five dollars is offered by the Epsilon Chapter of the Delta Phi Fraternity to that member of the Senior Class who shall write and pronounce the best English Oration.

The basis of award of this prize shall be as follows:

Essays shall be written upon any one of certain subjects designated by the Faculty and submitted to a committee thereof.

From these essays, the best, not to exceed five in number, shall be chosen and their writers having given these essays such form as may best suit the purpose, shall pronounce them in public before a committee appointed by the Faculty, who shall thereupon adjudge the prize.

**LUTHER LAFLIN MEMORIAL PRIZES**.—These prizes are given by LUTHER LAFLIN KELLOGG, Esq., of New York City, in memory of his grandfather, LUTHER LAFLIN, deceased.

The first prize of one hundred dollars will be open to students of either the Junior or the Senior Class in both the Classical and Scientific Schools, and will be bestowed on the one who shall pass the best examination on some work and shall submit the best essay on some theme assigned by the Professor of Metaphysics.

(a) An examination upon Aristotle's "Metaphysics," complete.

(b) Subject for essay in 1897: "The Protagorean Principle 'Homo Mensura.'"

The second prize of fifty dollars will be open to students of either the Junior or the Senior Class, in the Scientific School only.

(a) An examination upon Aristotle's "Metaphysics," complete—the French translation by St. Hillaire.

(b) Subject for essay in 1897: "Aristotle's Criticism of Plato's Doctrine of Ideas"

**BARBOUR PRIZES IN SPEAKING**—These prizes, two in number, of the value of fifteen dollars and ten dollars respectively, are offered by the Instructor in Elocution. The eight members of the Freshman Class of either section in regular course who shall stand highest in Elocution during the entire year may compete before a committee appointed by the Faculty.

**CLASSICAL PRIZE IN LOGIC (\$50).**—Open to Classical Students in full standing only.

(a) Examination upon Ueberweg's "System of Logic and History of Logical Doctrines" (English translation by Lindsay).

(b) Subject for essay: "Analogy the Basis of Inductive Reasoning."

**SCIENTIFIC PRIZE IN LOGIC (\$50).**—Open to Scientific Students in full standing only.

(a) Examination upon Mill's "A System of Logic" (eighth edition).

(b) Subject for essay: "Criticism of Bacon's, and Other Modern Objections, to Aristotle's Syllogism as an Organ of Reasoning."

**HONORABLE MENTION FOR WORK OUTSIDE THE COURSE DONE WITHOUT REFERENCE TO A PRIZE.**—For the encouragement of independent reading and study and original investigation, under the direction of the Faculty, honorable mention is made of students who give evidence of thoroughness in such work, and pass a satisfactory examination.

## BUILDINGS AND EQUIPMENT.

QUEEN'S COLLEGE—Erected 1808-1809. This building occupies the central position of the group of College buildings. It contains nine recitation-rooms, a commodious lecture-hall and the offices of the President and of the Registrar.

THE FINE ARTS BUILDING—Erected 1841-1842. The residence of former Presidents of the College has been refitted for the uses of the Fine Arts Department of the College, and is known as The Fine Arts Building. It contains the art collections of the College, including "The Thomas L. Janeway, M.D., Memorial Collection" of casts and photographs, and the various gifts of friends of the institution.

The pictures, models, casts and photographs are arranged to represent, as far as possible, the art of the world. A new lecture-room, having adequate facilities for illustrating lectures by the stereopticon and otherwise, is in use, and the arranging and classifying of the Museum is going forward. Acquisitions are being continually made to the Museum, and every facility for illustrating the history of art is being added to the department. Besides the lectures of the Professor in charge of this department, subjects related to the fine arts will be treated from time to time by other lecturers.



**The Thomas L. Janeway, M.D., Memorial Collection**

to illustrate Classical Archæology, is the gift of the heirs of Dr. THOMAS L. JANEWAY, of the Class of 1863.

It already includes (1) eight casts from marbles typical of the chief periods in the history of sculpture. These casts were manufactured by Brucciani & Co., of London. (2) Five hundred casts from engraved gems (cameos and intaglios) and coins, Greek and Roman. These were selected with an eye both to the study of the development of the art and to the especially full illustration of its best achievements. The workmanship on these casts is that of Augustus Ready, of the British Museum. (3) Eight hundred stereopticon slides, of which all but eighty-two were made by the well-known Levy, of Paris. (4) One thousand photographs and restorations. Among the photographers are Bonfils, of Beirüt; Sommer, of Naples; Anderson, of Rome; Mansell, of London; Lombardi, of London; Quaas, of Berlin; Hauteœur, of Paris.

The collection, made in Europe by a member of the College Faculty, is designed to illustrate the topography, art, life and literature of Ancient Greece and Rome, and for this purpose is used constantly by College classes.

VAN NEST HALL was erected in 1845, and named for Abraham Van Nest, Esq., a liberal trustee, in recognition of his services and gifts to the College.

In 1893 it was beautified by the addition of a stone porch, the gift of Mrs. Ann Van Nest Bussing, daughter of Abraham Van Nest, who at the same time refitted the eastern portion of the second story into a handsome hall

for the regular and occasional exercises of the students in Elocution.

During the same year the Trustees added a third story to the original building, thus creating a large and well-lighted room for the use of the classes in Draughting. On the second floor is another room for the advanced work in Graphics.

The rooms of the Peithessophian and Philoclean Literary Societies are on the first floor.

The building also contains the collections for illustrating the instruction given in the Engineering courses, comprising a great variety of models showing details of construction in wood, iron and stone, with a full set of Schröder and many Olivier models in Descriptive Geometry, besides blue prints, working drawings and lithographs of roof and bridge trusses. A complete outfit of Engineering and Surveying instruments is owned by the College for the use of the students in the Surveying classes.

THE DANIEL S. SCHANCK OBSERVATORY, erected in 1865, is a two-story brick building, with revolving dome, constructed especially for astronomical work. It contains in the main part the equatorial refracting telescope, mounted on a pier of solid masonry extending several feet below the surface of the ground, and detached from the floors, through which it rises, so as to be unaffected by the tremors of the building. The telescope is eight feet four inches in focal length, with an aperture of six and one-half inches, and was made by the late Henry Fitz, of New York. It has a small telescope attached for a finder,

a driving clock, a position micrometer, a number of eye-pieces of various powers ranging from 50 to 600 and a solar attachment for the study of sun-spots. The declination circle is ten inches in diameter, reading by verniers to one minute of arc, and the hour circle, seven and one-half inches in diameter, reads by verniers to six seconds of time.

On the west side of the main part is an extension for transit observations. The meridian circle used for this work was made by Stackpole, of New York, and has an object-glass four inches in diameter and four feet ten inches in focal length, with circles seventeen inches in diameter, reading by two microscopes with micrometer screws to single seconds of arc. The diaphragm carries one horizontal and seven vertical wires. There is also a striding spirit-level and an apparatus for reversing the axis of the instrument. The bearings rest on two stone pillars, supported by piers of masonry.

The observatory has also a sidereal clock, by Wm. Bond & Son, the gift of John Clark, Esq., of New Brunswick, with an electrical break-circuit; a mean solar clock, the gift of the Peithessophian Society of Rutgers College, and a reflecting circle, the gift of the Philoclean Society of Rutgers College, and several barometers and thermometers.

The observatory is in connection with the Western Union Telegraph line, so that time-signals may be exchanged with other observatories. The whole building and the instruments are illuminated by the electric light. The instruments are all in good working condition, and the student of practical astronomy has here unusual facili-

ties for learning the theory and use of astronomical instruments. The observatory is used in connection with the course in general astronomy, to give a knowledge of the sun, moon, planets, etc. Those who elect Mathematics and Astronomy receive instruction in the use of the instruments and take part in the observations. Post-graduate students can take a still more extended course.

The longitude of the observatory is  $0^h 10^m 25.08^s$  east of the old Naval Observatory, Washington, D. C.

The latitude is  $40^\circ 29' 57.6''$  N.

**GEOLOGICAL HALL.**—Erected 1871. The Physical Department occupies seven rooms on the main floor, and three in the basement. There are two lecture-rooms, an apparatus-room, a general laboratory, one laboratory for work requiring even temperature, a battery-room and an office.

The lecture apparatus comprises the usual instruments. The laboratories contain general apparatus, such as dividing engine, a set of United States standard weights and measures, metric standards, spherometer, planimeter, etc. Among the special apparatus are a steam engine, a gas engine, electric motors of various patterns, a storage battery, a model Edison three-wire plant of about two hundred lights capacity, a full set of electrometers, galvanometers and rheostats. The reference-books most frequently consulted are kept in the rooms of the department, ready for instant use.

In the large exhibition-room in the Geological Building the various collections in Natural History are displayed.

Through the indefatigable perseverance of the late Dr. George H. Cook, who was especially interested in this side of the College equipment, very valuable collections have been secured, illustrating a wide range of subjects.

The collection in Lithology is quite complete, all the well-known rocks being illustrated. The rocks of Europe are particularly well shown. There is a very fine collection to illustrate Palæontology, which, while it well covers the whole subject, is especially rich in the fossils of this State. These two collections occupy the cases on the north side of the room. The large collection of shells, to illustrate Conchology, is displayed to good advantage in a series of table-cases in the gallery. The collection of minerals occupies the cases on the south side of the room, and is quite full, though there are still many gaps in it. The varieties found in this State are well represented. Two cases at the east end of the room are filled with specimens of stone implements and ancient pottery, many of which have been found near New Brunswick, and which illustrate prehistoric Anthropology. This collection is in large part the gift of the Rev. John H. Frazee, D D., after whom it has been named. Two large central cases contain the Beck Collection of Minerals, and two others are filled with the rocks, clays and iron ores of New Jersey.

During the past two years a systematic arrangement of these collections has been made. The minerals, rocks and fossils have been carefully and completely arranged and labeled in such a way that they can be conveniently studied. It is intended to treat all the collections in a similar way, each label giving the donor's name whenever it can be obtained.

Donations are solicited from friends of the College to increase its collections, and to aid in the illustration of any of the subjects taught.

**THE KIRKPATRICK CHAPEL AND LIBRARY**—Erected 1872—is built of brownstone, in the French Gothic style of the Fourteenth Century. The auditorium is attractive, having a roof of opened timber, finished in black walnut and stained pine. On the walls hang numerous portraits of former officers and benefactors of the institution. It has a seating capacity for 350 persons.

Back of the Chapel is the large room designed for the President's classes, and adjoining is the assembly-room for the Trustees. Above these rooms is the Library.

#### LIBRARY.

The Library of the College, containing 34,000 volumes, is open for consultation during each term as follows: On Mondays, Tuesdays, Wednesdays, Thursdays and Fridays, from 8 to 8:40 A. M., and from 12 M. to 12:50 P. M., and from 2 P. M. to 4:30 P. M.; on Saturdays from 9 A. M. to 12:50 P. M., and from 2 to 4:30 P. M. Students are allowed free access to the books, and are encouraged to become familiar with the proper methods of using a library for literary work.

In 1887, the late P. VANDERBILT SPADER, Esq., of New Brunswick (a member of the Class of 1849), gave to the College his personal library, valued at \$15,000, and consisting of about 5,000 books, among them many very valuable art volumes, and collections especially rich in State and local history, and in books of reference. By his will

the College has received \$10,000, the income of which is to be expended for the maintenance and increase of the P. Vanderbilt Spader Library Gift.

By the gift of a permanent fund of \$1,000 from JAMES SUYDAM, Esq., supplemented by gifts from other sources, the library is supplied with the leading periodical publications in the various departments.

By the courtesy of the Theological Seminary of the Reformed Church, the Sage Library of more than 40,000 volumes is opened to the students of Rutgers College for consultation; and under certain limitations books are drawn from it as well. It is within four minutes' walk of the College campus.

THE STATE LABORATORY of the New Jersey Agricultural Experiment Station was authorized by an act of the Legislature approved April 23d, 1888. It affords accommodations for the uses of the State and Agricultural College Stations, and by the courtesy of the Board of Managers of the State Station, who also constitute the State Board of Visitors to the Agricultural College, for the laboratory and class-room work of the students of the Agricultural College who are pursuing the regular and special courses in Agriculture, Chemistry and Biology.

The Agricultural and Biological departments have an equipment for purposes of instruction, consisting of—

(a) College Farm—equipped with modern farm buildings and arrangements, improved farm implements, including corn-harvesters, potato-diggers, seed-planters, engine and boiler, cutters and crushers for fodder, hay-loaders

and mowers. The dairy is equipped with the leading cream separators, milk coolers and bottles, Babcock tester, etc. A poultry-house has recently been erected, which is provided with incubators and adequate facilities for experiments in the breeding and care of fowls.

In the early summer of 1895 an irrigation plant was placed upon the farm, designed to supply the water needed by vegetables and fruits on at least ten acres.

(*b*) Laboratories—separate rooms for Botany, for Entomology and for Zoology have been equipped with tables, accessory microscopic apparatus, histological reagents, microtomes, material for dissection, eighteen compound microscopes (Bausch and Lomb's, Reichert's and Leitz's), giving powers up to 800 diameters; also many dissecting microscopes.

(*c*) Auzoux Models—illustrating the structure of Man, Horse, Bird, Reptile, Fish, Mollusc, Worm, Insects (Cockchafer, Silkworm larva and moth, Honey-bee and its work) and Plants (various flowers, fruits and fungi).

(*d*) Charts (including many of Leuckart's charts)—illustrating the various parts of the living world; also many photographs and lantern slides.

(*e*) Cabinets—a collection of slides illustrating histology and the anatomy of minute animals, especially the insects; also a collection of 5,000 species of insects systematically arranged; also a collection of nearly 25,000 plants.

(*f*) Museums—a collection of stuffed animals and alcoholic specimens systematically arranged, 60 large boxes containing a collection of injurious insects and examples of their work, a systematic collection of over 5,000 species of American insects, preparations of pathological plant



specimens, a collection illustrating the biology of the oyster, its messmate and enemies, and a fine systematic collection in Conchology.

(g) Besides this equipment for direct instruction, the student has brought under his observation the equipment of the research laboratories of the experiment stations in working operation, such as the processes and instruments used in the study of milk, soils, fertilizers, bacteria, mycology, micro-photography, insecticides, fungicides and other experiments relating to agriculture.

The facilities for teaching Chemistry are fully equal to the demands. The two laboratories furnish abundant room to the students, and are equipped with filter-pump, water-blast and tables for organic analyses, besides the ordinary facilities found in all laboratories. An adjoining room has been fitted up as a department library, in which are standard works of reference and the important chemical journals on file. The students are encouraged to spend all spare time in this room. The lecture-room is abundantly lighted, and the table well fitted for experimental lectures. Special pieces of apparatus are constantly acquired, particularly to illustrate the more difficult points in the new developments of Chemistry, and for investigation. The collection to illustrate the lectures on Applied Chemistry is growing. Contributions are earnestly solicited.

WINANTS HALL—DORMITORY—Erected 1890. This building serves as a dormitory and refectory for such students as choose to lodge and board at the College. It accommodates 100 students. The rooms are arranged

in suites of a study and two sleeping-rooms, for two and three room-mates, and there are a few single rooms. Special attention is given to light, ventilation and sanitary appliances, and to the necessary quiet retirement and privacy of the students.

Ample provision is made for fire-escapes and other securities against accidents.

The entire building is heated by steam. Bath-rooms, laboratories and store-rooms are on each floor.

The large study-rooms are each furnished with two study tables and two chairs. The bed-rooms are each furnished with a solid oak set, consisting of bedstead (springs and mattress), bureau and washstand. The remaining furniture, such as sheets, pillows, pillow-cases, coverlets, towels, bowl and pitcher, etc., are to be supplied by the occupant. The schedule of prices for single rooms and suites of rooms includes heat and gas light.

In drawing for choice of rooms, the order of classes will be followed, precedence being given to the Seniors.

Rooms are to be taken for the full year. Rent is payable in advance, one-third at the beginning of each term. Agreement to pay rent is for the entire suite, and must be signed by the student who draws it, or his guardian. Rooms may be occupied from the Monday preceding the opening of the College year to the Saturday following Commencement.

During the present year board is furnished by the matron at \$3.50 a week.

The drawing for choice of rooms for the year 1897-'98 will take place in the Registrar's office on Wednesday, June 2d, 1897, at 2:30 P. M.

SCHEDULE OF PRICES A WEEK OF ROOMS IN WINANTS  
HALL FOR 1897-'98.

The following schedule gives the weekly rental for each occupant of the respective rooms, and no more may occupy any suite than is indicated in parenthesis after the room numbers. One student occupying a double room, or two students occupying a room intended for three, will be charged the full rental for the suite:

**\$1.00**—11 (1), 15 (1), 16 (1), South, First Floor; 116 (1), 117 (1), 121 (8), North; 127 (8), South, Fourth Floor.

**\$1.25**—5 (8), North; 9 (2), 20 (2), South, First Floor; 118 (2), North; 132 (2), 135 (1), 136 (1), 137 (2), South, Fourth Floor.

**\$1.50**—70 (8), 76 (1), 77 (1), 81 (3), North; 102 (3), 113 (3), South, Third Floor.

**\$1.75**—23 (8), 29 (1), 30 (1), 34 (3), North; 55 (8), 66 (3), South, Second Floor; 108 (1), 109 (1), South, Third Floor; 124 (2), Middle; 140 (1), North, Fourth Floor.

**\$2.00**—61 (1), 62 (1), South, Second Floor; 87 (2), 90 (2), 96 (2), 97 (1), 99 (1), Middle, Third Floor.

**\$2.25**—2 (2), North; 12 (2), 17 (2), South, First Floor; 40 (2), 43 (2), Middle, Second Floor; 73 (2), 78 (2), North; 105 (2), 110 (2), South, Third Floor.

**\$2.50**—26 (2), 31 (2), North, 53 (2), 63 (2), South, Second Floor.

**THE ROBERT F. BALLANTINE GYMNASIUM.**—By the generosity of Robert F. Ballantine, Esq., of Newark, N. J., a Trustee of the College, a building was completed in 1894 which affords unexcelled opportunities for physical instruction and exercise, and for military instruction and drill. This Gymnasium is situated on spacious grounds given to the College by another Trustee, James Neilson, Esq., of New Brunswick. The building is in two parts, the front portion being devoted to purposes of administration, and the rear, the gymnasium and drill-room proper.

Ample offices are provided for the instructor in military science and the instructor in physical culture. The gymnasium and drill-room combined afford an unobstructed space one hundred feet by sixty in dimensions. The apparatus is of the most approved kind, and was chosen by the director of one of the best systems of physical instruction in the country. Suspended from the truss-roof is a running-track two hundred and eighty feet in length. Space is also afforded for the armory of the Scientific School. On the one side of the administration building is a large room for lockers, on the other side a room for military equipments. On the floor above apartments are provided suitable for all the uses incident to these purposes. In the basement are a swimming-tank, shower and needle baths, a ball cage and four bowling-alleys of perfect construction.

The building is a fine specimen of the colonial style of architecture.

**ATHLETICS.**—In order to secure for the students the benefits of out-of-door exercise, athletic sports are encouraged by the provision of adequate facilities. Rightly controlled, such sports have shown themselves beneficial both to the health of the students and to the quality of the work done, and are manifestly in the interest of good order. The more prominent athletes have been generally among the more earnest and successful students. The proper control of athletics has been secured by the organization of an incorporated athletic association, supported by the students and managed by a board of nine trustees, chiefly composed of resident alumni. In this board the Faculty has always

had one or more representatives, and in this way a cordial co-operation has been steadily maintained between Faculty and students, avoiding the need for the exercise of direct authority.

**THE NEW ATHLETIC FIELD.**—By the generosity of James Neilson, Esq., of New Brunswick, an alumnus and Trustee of the College, there is now provided an athletic field, containing more than five acres and at a walking distance of about eight minutes from the College campus.

About five thousand dollars were spent in improving this field and providing proper accommodations. It is furnished with a commodious grand stand, with dressing-rooms and bath-rooms attached, and with everything to make it as nearly perfect as possible and to render it practically useful to the students.

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RUTGERS COLLEGE  
PREPARATORY SCHOOL.

FOUNDED 1766.

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E. R. PAYSON, PH.D., HEAD-MASTER.

This School is under the direction of the Trustees of Rutgers College, and prepares boys for any American College or Scientific School.

It is completely equipped with suitable buildings and provided with a full corps of instructors.

For catalogue, address

E. R. PAYSON, Ph.D.,  
New Brunswick, N. J.

## REGISTER.

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### 1. SOPHOMORE ORATORS, CLASS OF 1898.

In the order of their appointment according to merit:

EDWARD DAWSON.	GEORGE TODD VAULES.
JACOB WYCKOFF.	EDWARD GODFRED WALTER MEURY.
GEORGE HARRINGTON.	JOHN FINLEY DRAKE.
FRANCIS KEES WYNKOOP DEURY.	JOHN BLACK.

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### 2. JUNIOR ORATORS, CLASS OF 1897.

JUNIOR EXHIBITION, JUNE 15, 1896.

JOHN NEILSON CARPENTER, JR.	WILLIAM JAMES MORRISON, JR.
CLIFFORD PHILIP CASE.	RALPH BREWSTER PARROTT.
LEWIS GASTON LEARY.	LOUIS PROVOST PEEKE.
ANDREW JOHN MEYER.	JOSEPH SCUDDER.

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### 3. GRADUATING EXERCISES, CLASS OF 1896.

COMMENCEMENT, JUNE 16, 1896.

*LANE COOPER, . . . . .	New Brunswick, N. J.
Second Classical Honor.	
GUSTAV FREDERICK WITTIG, . . . . .	New Brunswick, N. J.
Third Scientific Honor.	
FRANCIS EDWARD TILTON, . . . . .	Holmdel, N. J.
Oration.	
LANE COOPER, . . . . .	New Brunswick, N. J.
Rhetorical Honor.	
ROBERT MATTHEWS PIERSON, . . . . .	Elizabeth, N. J.
Second Scientific Honor.	
JOHN LAWRENCE DURYEE, . . . . .	Newark, N. J.
Third Classical Honor.	
GEORGE SMOCK HOBART, . . . . .	Marlboro, N. J.
First Classical Honor.	
CHARLES ANSON POULSON, . . . . .	Mendham, N. J.
First Scientific Honor.	
WILLARD CONGER, . . . . .	New Brunswick, N. J.
Oration.	
RICHARD SWANN LULL, . . . . .	Amherst, Mass.
Master's Oration.	

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\* Excused on account of delivering the Rhetorical Honor Oration.

4. HONORS IN SPECIAL SUBJECTS.

In Latin, . . . . .	GEORGE SMOCK HOBART.
In Greek, . . . . .	CHARLES GILBERT MALLERY.
In Mental Philosophy, . . . . .	LANE COOPER.
In Mathematics, . . . . .	GEORGE SHELDON MOWER.
In Chemistry, . . . . .	CULLEN WARNER PARMELEE.
In History, . . . . .	GEORGE SMOCK HOBART.

5. DEGREES CONFERRED.

Degree of Bachelor of Arts Conferred on Candidates in Course.

HENRY WELLS BRINK,	CHARLES GILBERT MALLERY,
WILLARD CONGER,	EDWIN CORWIN MCKEAG,
LANE COOPER,	EDWARD JAY MEEKER,
ALFRED DRURY,	CHARLES SCUDDER POOL,
JOHN LAWRENCE DURYEE,	EDWARD TAYLOR RANDOLPH,
GEORGE SMOCK HOBART,	WILLIAM ADDISON RANNEY,
ARTHUR FREDERICK JENNINGS,	FRANCIS EDWARD TILTON,
JOHN BROWNLIE VOORHEES.	

Degree of Bachelor of Science Conferred on Candidates in Course.

LOUIS DERBY AYRES,	BARTHOLOMEW FRANCIS MONAGHAN,
JOSEPH GEORGE BAIER,	GEORGE SHELDON MOWER,
WESLEY WARNER BURDEN,	GEORGE WINFIELD NUTTMAN,
WILLIAM RYALL BURTIS,	WILLIAM O'CONNOR,
WILLIAM PIERSON CARTER,	CULLEN WARNER PARMELEE,
WALTER KNICKERBOCKER CAVILEER,	ROBERT MATTHEWS PIERSON,
GEORGE DUNN CORNISH,	JOHN FRANCIS POST, JR.,
BERGEN DAVIS,	CHARLES ANSON FOULSON,
PAUL KIRK DOUGLAS,	IRVING LEE REED,
ERKURIES BRATTY FITHIAN,	ALLISON BURTON ROOME,
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Suydam Prize in Natural Science, . . . . .	WILLIAM V. B. VAN DYCK.
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Bowser Engineering Thesis Prize, . . . . .	JOSEPH G. BAIER.
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